DR2 Solid State Recorder

User Manual

Covers: 1 Channel/4 Channel versions with/without lap timer option

Version 2.0.1DD
16 May 2008

CAUTION!!!

Read this User Manual carefully. There are no user serviceable parts inside. Removing the cover screws will void your warranty. If your DR2 requires servicing, please contact Drivedata.

IMPORTANT!

Do not use the DR2 to power devices other than a single bullet camera!!

If you are using the DR2-4 (4 channel version), you can power up to 4 cameras from the unit, as long as you have the supplied mains adapter/charger connected or you are using an external battery pack. The unit will not operate correctly if you try and power more than 1 camera from the internal battery.

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Introduction

Introduction of DVR

DVR is a dedicated battery powered Digital Video Recorder designed for portable, mobile Video and Audio Recording applications. The DVR hardware system uses ARM9 processor and advanced hardware MPEG-4/2 video encoder, PCMCIA interface, charging circuit, vibration/alarm circuit, video capture, IRIS camera interface and MCU designed on board. The MCU is used to process remote control, push buttons, power management, LANC and alarm. PCMCIA can support CF with FAT32 files system. Recorded video on CF card can be replayed on a PC instantly. PCMCIA interface can also be used to connect other peripheral devices for future extension.

The OS of DVR is Linux. It handles multiple tasks in real time, for example; driver, recording, AV synchronization, file management and external events etc.

The common Compact Flash card is used as a storage medium. The CF card is a solid storage media with the best anti-shock capability available today. It is also low powered and provides fast speed with multiple diversity options. It is very good choice for mobile DVR applications.

DVR offers two encoding formats, MPEG-2 for DVD and MPEG4 for archive and streaming video.

MPEG-2

MPEG-2 is a standard for generic coding of video and audio. It is widely used in consumer electronics, such as DVD video disc, DVD player, DVB television broadcasting etc. The DVR can record in MPEG-2 format which can be edited by any video editing software or replayed by DVD player.

MPEG-4

MPEG-4 is the awesome new generation video standard with better video quality and higher compression rate. For exceptional disc space saving, MPEG-4 is capable of creating highly compressed video archives on a regular CD-ROM with almost the same quality of DVD. One popular MPEG-4 format is DivX. It is the only technology that enables streaming of video on the internet possible. Now, many DVD players can play DivX files directly.

Features

- ✧ Battery powered for portable, mobile DVR applications
- ✧ Intelligent and uninterrupted battery and AC power swap in real time
- ✧ Capture Video & Audio live from any composite video output
- ✧ Support MPEG-4/2 video format for longest record time
- ✧ Video Bit Rate : 1M~8Mbps
- ✧ Frame Rate : PAL(25fps), NTSC(30fps)
- ✧ Support PAL/NTSC/SECAM standard
- ✧ Resolution : Full-D1, CIF/SIF (1M Bitrates)
- ✧ Supports Single File & Full Disk Cycle Record Mode
- ✧ Supports ADPCM Audio Format
- ✧ Audio Sampling : 8/16/32/48KHz
- ✧ On-board IR remote controller
- ✧ LANC remote controller support
- ✧ AC adapter or Internal Li-Ion Rechargeable Battery
- ✧ On-board battery charging circuit
- ✧ Offers power for camera & MIC
- ✧ Changeable CF Flash Card to save video
- ✧ Multi-Color LED for status
- ✧ Micro Vibration Motor or Beep status warning
- ✧ Optional OSD and RTC
- ✧ Optional Lap Timer
- ✧ Palm sized
- ✧ Only 160g weight with battery and CF card
- ✧ Video/Audio input
- ✧ Linux OS and upgradeable firmware
- ✧ Support Windows 98/ME/NT/2000/XP/Vista for Playback

Product and Accessories

DVR	1pcs
AC Power Adapter	1pcs
Recharge Li-ion Battery (Internal)	1pcs
Remote Control	1pcs
PCMCIA-CF Adapter	1pcs
IRIS-RCA Jump Cable	1pcs
External Beacon Receiver (Only for Lap Timer Edition)	1pcs
Video Input Cable (Only for 4CH DVR)	2pcs
A/V Output Cable (Only for 4CH DVR)	1pcs

**** Power adapter and battery are for DVR only and don't use any other power adapter and battery instead in case of damage.***

**** When you connect AC power adapter to charge internal Li-Ion battery but don't record, please enable Power-Off option to decrease heat of DVR & protect DVR.***

Installation

Preparation

Please read user's manual careful before installation. Check the minimum requirements of system and recommended system configuration.

DVR Configuration

- ✓ PCMCIA-CF adapter
- ✓ SanDisk Ultra II CF card, 512MB minimum

PC configuration for replay

- ✓ CPU : Pentium III 1G and above
- ✓ RAM : 512MB and above
- ✓ DVD Recorder : DVD±R/RW
- ✓ OS : Windows 2000 (SP4), Windows XP (SP2), Vista
- ✓ HDD : 7200RPM, 10G free space
- ✓ Display : 1024x768 and above, 24/32 bit color depth
- ✓ Graphic Adapter : Support DirectX 9.0c
- ✓ USB : One free USB 2.0 host interface
- ✓ Card Reader : one high speed USB 2.0/1394 card reader
- ✓ PCMCIA : Optional PCMCIA interface

Installation Guide

Before Installation

1) Check all accessories and CF card
2) Format CF card with FAT32 file system if it is new
3) Check power adapter and battery
4) Check whether PC and peripherals match the recommended configuration

Installation

1) Make sure power switch is in off position
2) Insert CF card into PCMCIA adapter
3) Push PCMCIA adapter with CF card into the PCMCIA slot
4) Connect camera properly

Startup

1) Connect AC power adapter
2) DVR will start self-diagnostics when power on
3) The LED is red in self-diagnostics and will turn yellow on start-up. The LED turns to green once start-up successful.
   It takes about 12 seconds to startup
4) The LCD displays **Init…** during startup, after startup successful, the LCD will display **DVR**
5) You will hear a beep one time once DVR start-up
   The Vibration Motor will vibrate one time once when DVR start-up successfully *****
6) The battery will be charged automatically when power on and LED turns on red

The battery should be fully charged before first use. The charging LED goes out once charge finished.

Please charge the internal Li-Ion battery over night & until the charging LED goes out. Li-ion rechargeable battery is expendable.

The battery should be replaced after 500 charge cycles. The used battery should be disposed properly.

**** The Beep & Vibration Motor is only one in DVR, The Beep is standard part, Vibration Motor is optional only for special model.***

Safety and Warning

**** Never connect IRIS-Power output to any power adapter. It may be damage the interface and board.***

**** There are no user serviceable parts, please do not open the unit. Doing so can damage the unit and will void your warranty.***

**** Restrict input voltage to range from 9V to 15DC, 12V DC is recommended. Never apply DC voltage beyond this range or AC voltage to the DVR.***

**** Only use AC power adapter supplied with the unit. Do not use third party AC power adapter, it may cuase unexpected problems or damage.***

**** Restrict powering devices drawing more than 200mA current for 1CH DVR.***

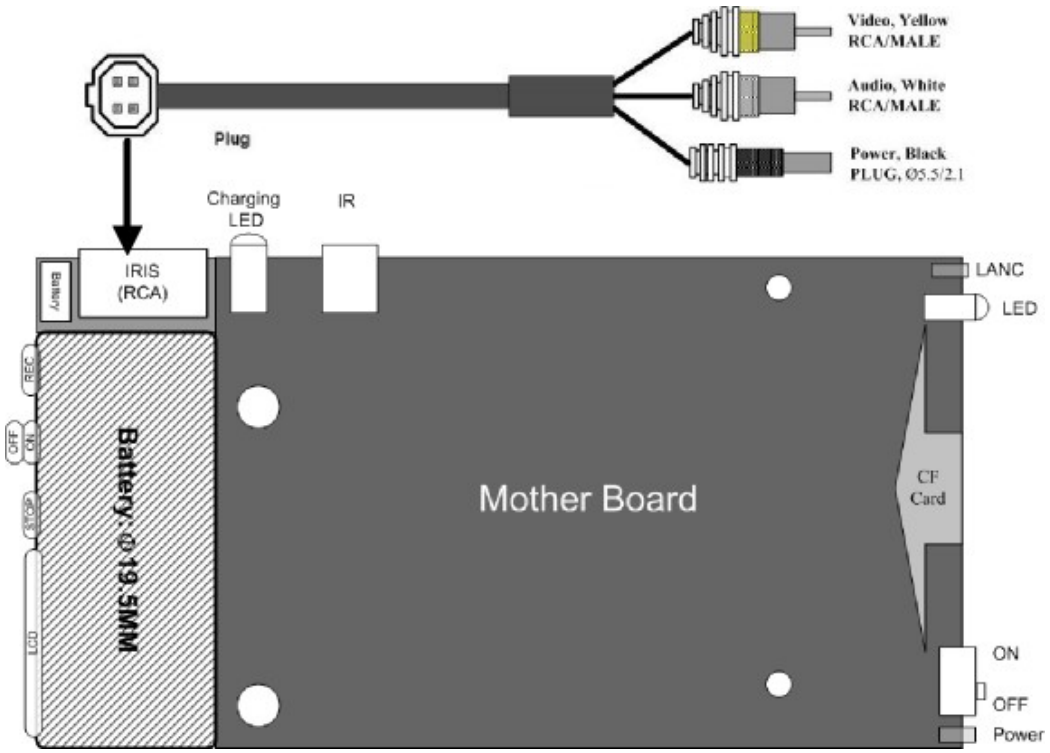
**** Restrict powering devices drawing more than 700mA current for 4CH DVR.***

**** When DVR powered by internal battery, don't connect camera more than 1pcs.***

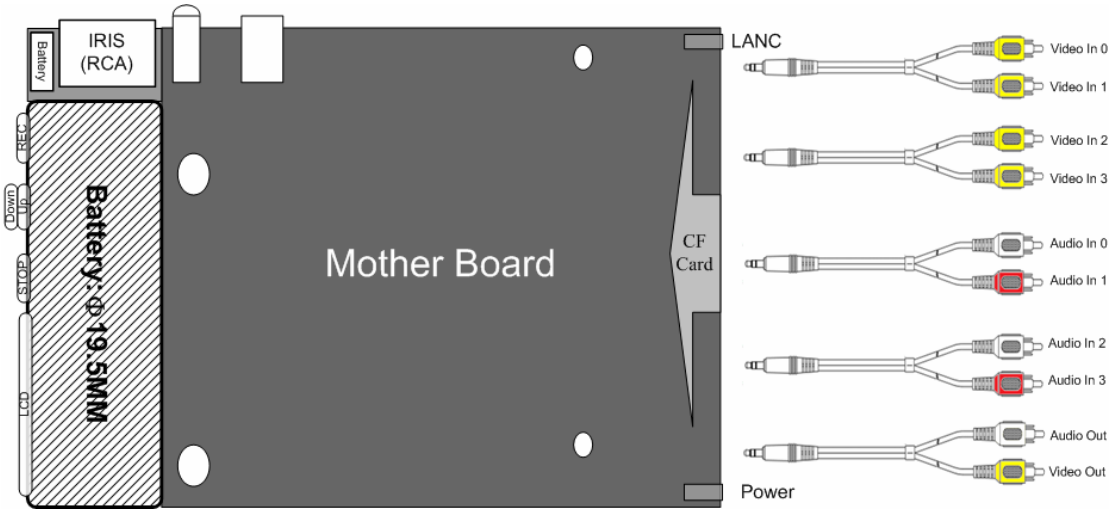
**** Never insert and remove CF card while power is on.***

Connect Video/Audio signal to DVR

1 Channel DVR



4 Channel DVR



Video and Audio Interface

If the DVR is configured as RCA audio/video interface, the colours correspond to:

Yellow- Video

White- Audio

Black- Power output

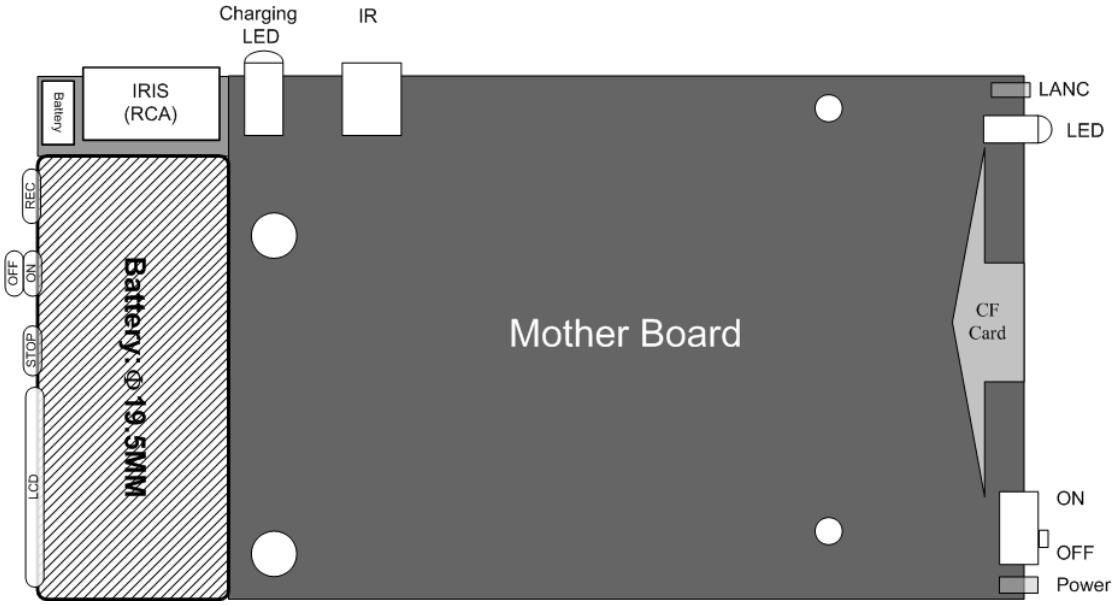
Button/Bullet Camera Interface

Some button cameras can connect to DVR directly without the jump cable if the interface of button camera conforms to the IRIS interface in Appendix.

Eject CF Card

1) Wait until the LED turns green
2) Disconnect power adapter & Switch off power from the internal battery
3) Eject CF card

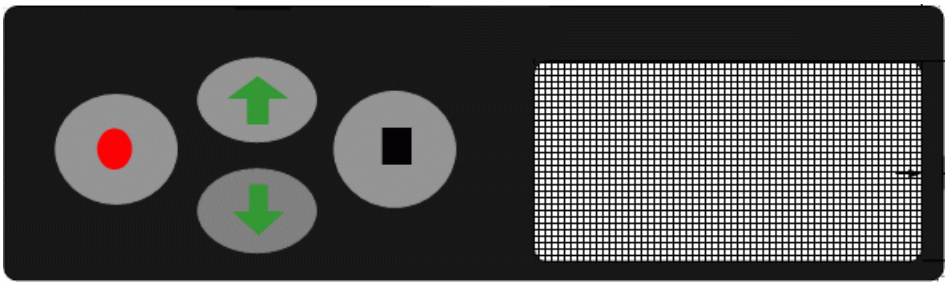
Operation of DVR



Quick Start

No configuration is required to start recording with the DVR.

The operation of the DVR is quiet simple. There are two push buttons, REC and STOP. An LED is used to indicate the status of operation.



Push Button

RECORD

Press the (REC) button for at least one second to start recording.

The LED will flash red and you will hear three beeps.

The flash frequency is about 3 times per second. Slower flash frequency means no video signal is connected.

STOP

Press the (STOP) button for at least three seconds to stop recording. The LED turns to green & you will hear 2 beeps.

It will take a short while to save buffered data after stopped. The power can not be turn off until the LED changes to green. Early eject the CF card will cause destroy of video file integrity. Disconnect AC power adapter and switch off battery before eject CF card.

Infrared Remote Control

Infrared remote control is optional for DVR.
Three buttons are defined currently:

Start recording

Stop recording

Keep pressing to make DVR in Sleep/Wakeup mode

Infrared Remote Control for 4 Channel DVR

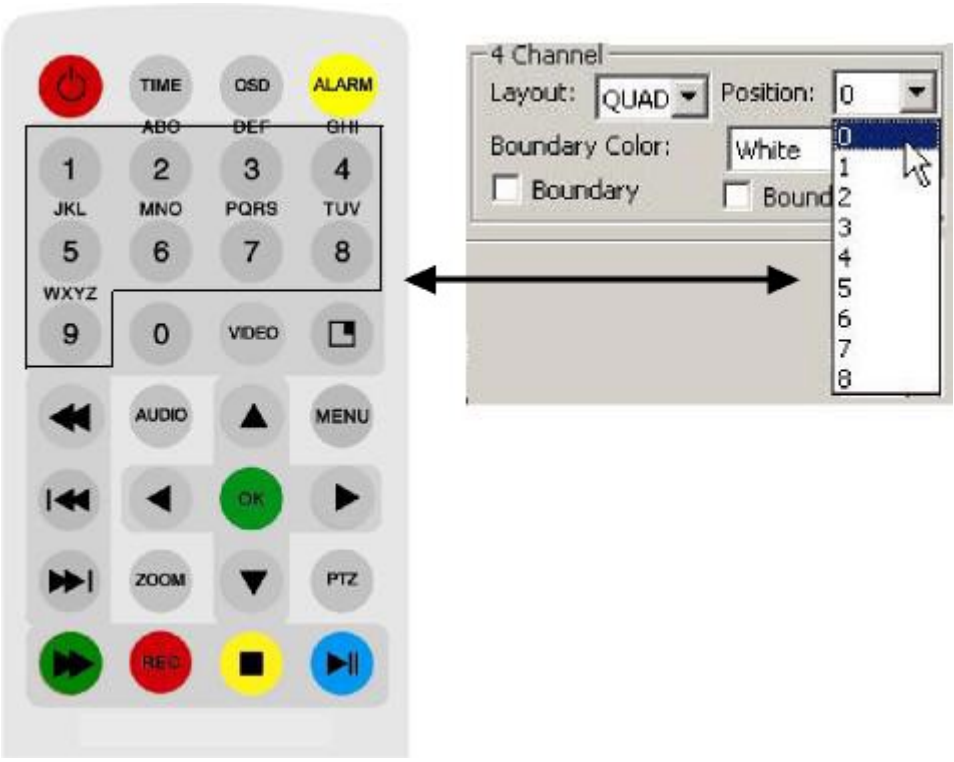
The numeric key on the IR remote controller controls 9 positions of Picture-In-Picture, you can configure it & select any one array method as your default array using the DVR Configuration Utilities.

You can switch the array method using numeric key on the IR remote controller directly when you record the video using 4 Channel DVR. The numeric key 1~9 is opposited with 9 items in **Position** pull down menu.

Numeric Key on IR remote Controller	Item in Position Menu
1	0
2	1
3	2
4	3
5	4
6	5
7	6

8	7
9	8

Table showing numeric key on IR remote controller & Position menu



NOTE :

- **Numeric key on the IR remote controller are used for 4 channel DVR only.**
- **Numeric key on the IR remote controller are used only when you set Layout to PIP on 4 Channel area.**

LANC Remote Control

The DVR support multi-version LANC Remote Control, please power off DVR & unplug AC Power adapter, then plug LANC remote control into LANC jack with logo.

NOTE : SkyTools CamEYE SPORT LANC Remote Control V1.4 & V1.6 are supported by the DVR.

Power on the DVR, after booting is finished, you can control the DVR start/stop recording using LANC remote control. And you can power off DVR & power on it again.

After the DVR starts successfully, the status LED on LANC remote control will display green. Press the button on the center of LANC to start recording, and the status LED on LANC will flash red & the unit beeps 3 times once started successfully.

Press button again, the DVR will stop recording, the status LED on LANC turns to green.

Hold the button on LANC for approx 3 seconds untill the status LED on LANC flashes red. This will power down the DVR, when the DVR powers down, the status LED on LANC turns to yellow.

In power off status, press button on LANC to power up the DVR again.

NOTE : DO NOT PLUG OR UNPLUG LANC REMOTE CONTROL WHEN DVR POWER ON & AC POWER ADAPTER IS CONNECTED !! YOU MUST POWER DOWN THE DVR, UNPLUG AC POWER ADAPTER, THEN PLUG/UNPLUG LANC REMOTE CONTROL.

Wireless Remote Control

Optional for specific applications with an additional module of wireless remote control.

Video Quality

1M: Record video using 1Mbits/s, record video based on CIF/SIF resolution.
EP: Record video using 2Mbits/s.
LP: Record video using 4Mbits/s.
SP: Record video using 6Mbits/s.
HQ: Record video using 8Mbits/s.

The recorded file size is dependent on the complexity of movement objects. The following is the estimated recording time:

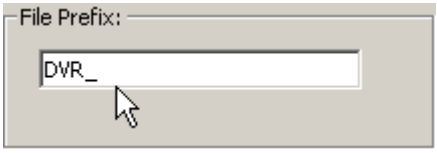
1M : 100 min/GB
EP : 60 min/GB
LP : 40 min/GB
SP : 20 min/GB
HQ : 15 min/GB

Larger storage cards can yields longer recording time and better picture quality. For example, current capacities of CF card on the market are from 512MB to 16GB. 4GB CF cards can record 4 hours in EP mode.

EP mode is recommended for slower moving or still background scene with some moving objects in front. SP mode is recommended for fast moving background scenes.

Video File Name

Record file name starts with DVR_ by default. The file name will be DVR_xxx.avi. XXX is incremental from 000 to 999. The prefix DVR_ can be modified in DVR Desktop software.



DVR Status

- Power up: LED is yellow for less then 1 second.
- Self diagnostics: LED is red for about 10 seconds.
- Standby: LED is green. Means it is ready to record.
- Recording: red LED will flash about 6 times/second.
- CF full: yellow LED will flash.
- Battery Low: Recording is stopped automatically. LED flash 4 times and enters sleep mode
- Sleep: LED is yellow. Only the (POWER) button can wake it up.
- No Video: LED will slowly flash red whilst trying to record.

Replay Video

Software

It is simple to replay video recorded on CF card. Media player can play the video files directly within Windows.

DivX Codec or player has to be installed if no related components are installed on PC. You can download DivX decoder from internet & install it. We recommend the use of VLC media player which can be downloaded for free on the internet.

Card Reader

High speed card readers are recommended for read and replay of recorded video. If the card reader is fast, your PC can replay video instantly from the CF card without coping video file to PC hard disk first.

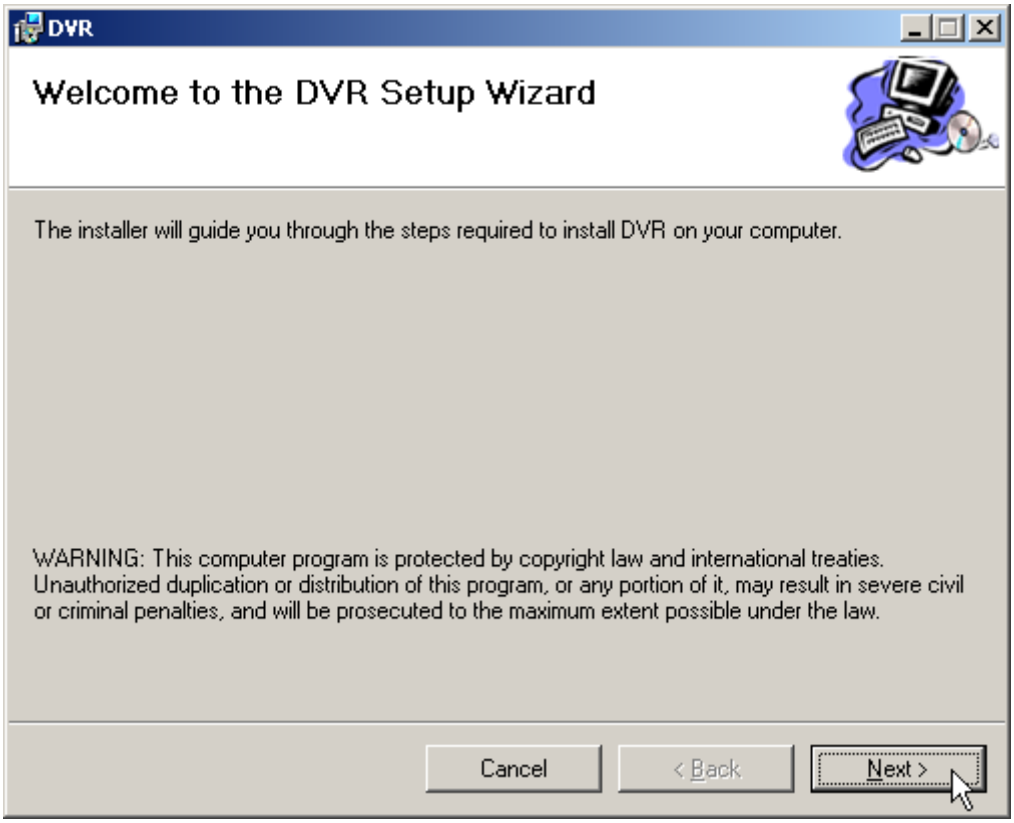
PCMCIA Interface

Most laptops have a PCMCIA interface. CF card with a PCMCIA adapter can be read directly by Laptops with this interface. Copy the video files to PC and then replay the video files because PCMCIA is relatively slower.

Install DVR Desktop

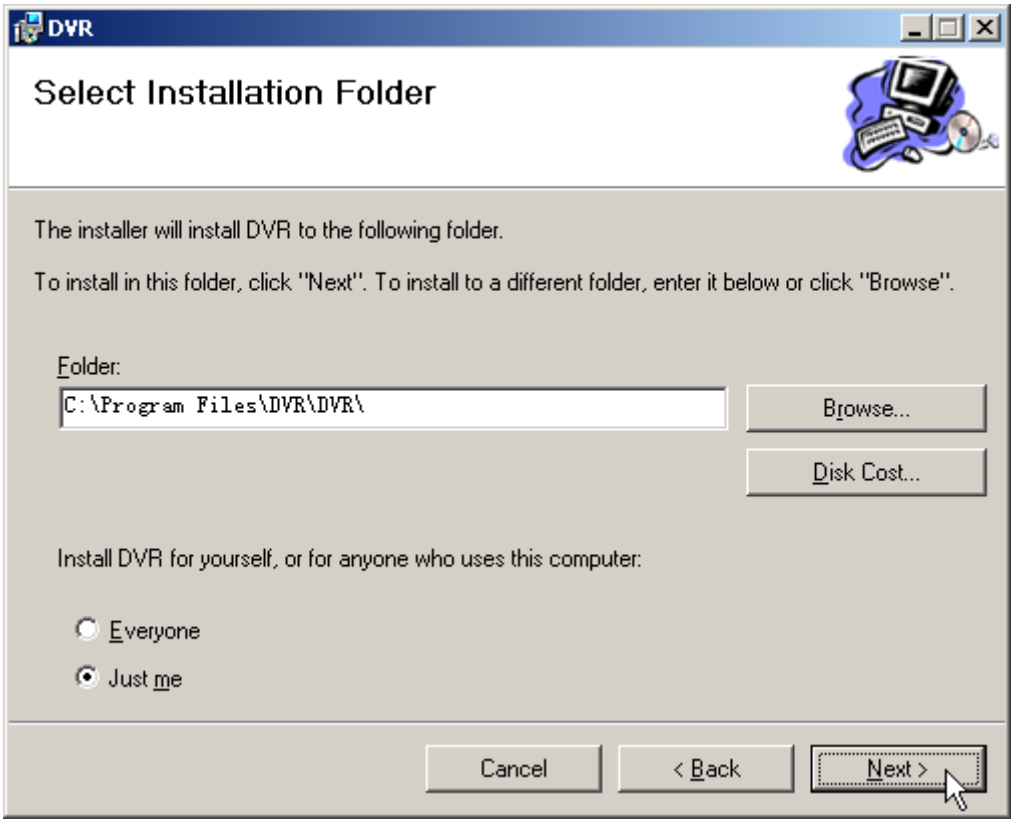
DVR Desktop Installation

Install DVR Desktop before you use the DVR for the first time. Run **setup.exe** to install DVR Desktop.

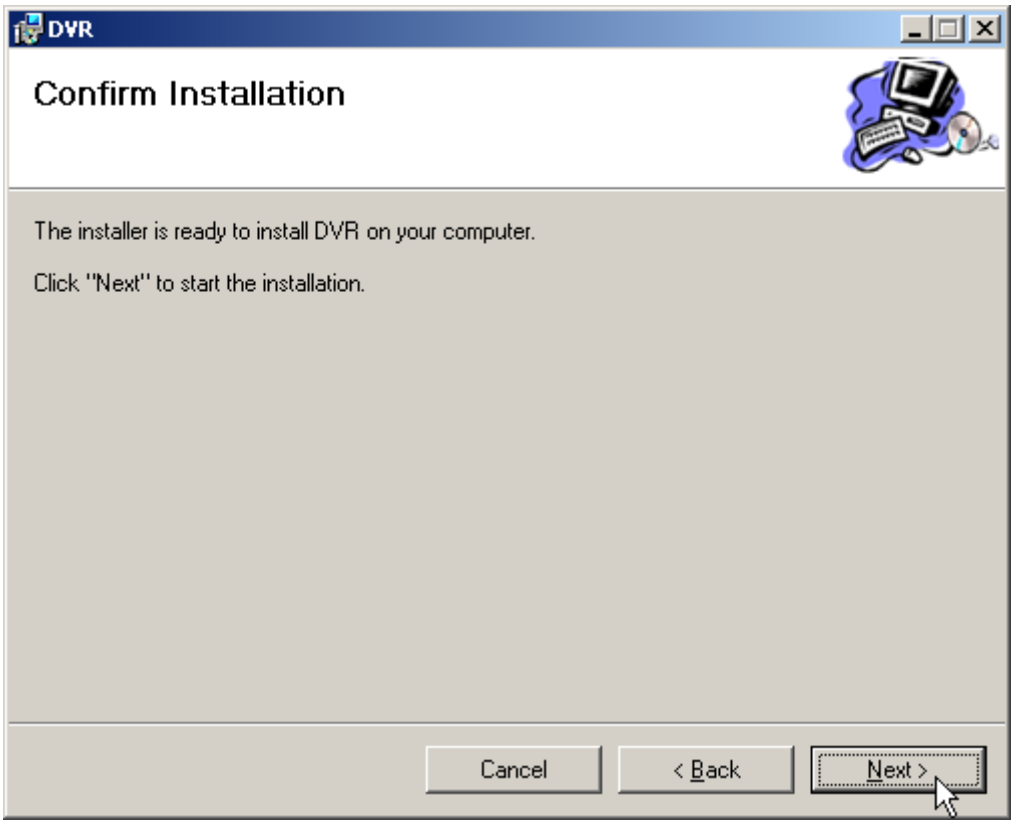

DVR
Welcome to the DVR Setup Wizard
The installer will guide you through the steps required to install DVR on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

Click **Next >** button to continue installation setup.

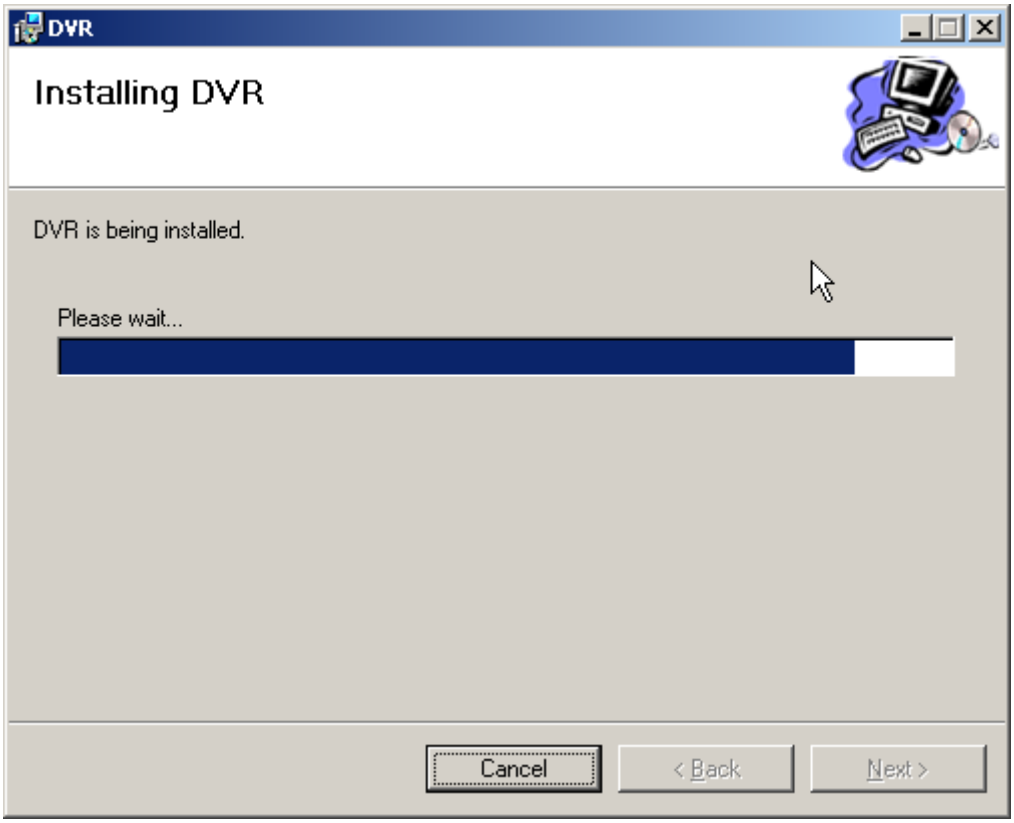
During the installation process, you can select the target folder or use the default folder when software prompts you.


DVR
Select Installation Folder
The installer will install DVR to the following folder.
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".
Folder:
C:\Program Files\DVR\DVR\
Browse...
Disk Cost...
Install DVR for yourself, or for anyone who uses this computer:
Everyone
Just me
Cancel
< Back
Next >

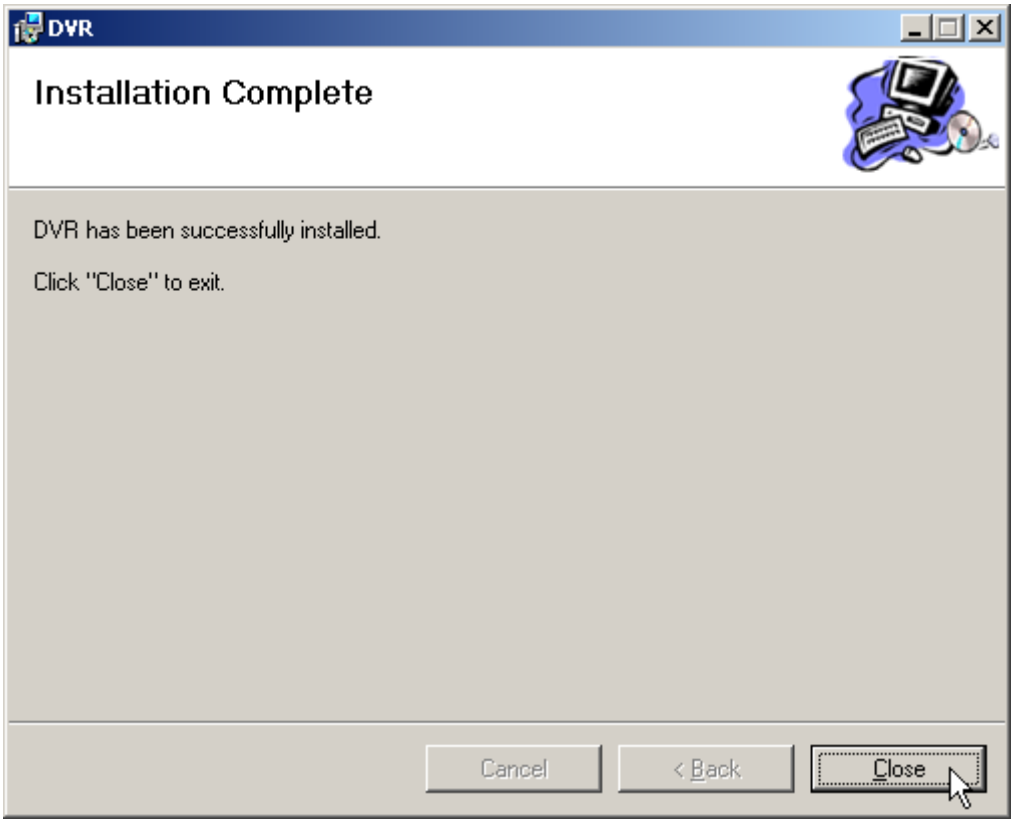
After you select the target folder, Click **Next >** button to confirm it.


DVR
Confirm Installation
The installer is ready to install DVR on your computer.
Click "Next" to start the installation.
Cancel
< Back
Next >

Click **Next >** button to start DVR software install.



Click **Close** button to finish it when installer prompt you the installation is successfully.



After you install the DVR Desktop, the software shortcut **DVR Desktop** will be generated on the desktop and DVR program folder.

DirectX 9.0c is required to install and run DVR Desktop.

Configure DVR

The DVR is initialized as DEVICE.INI under the root directory of the CF card. It must be in the root directory of CF card. The DVR will use the last time configuration if DEVICE.INI not found during startup.

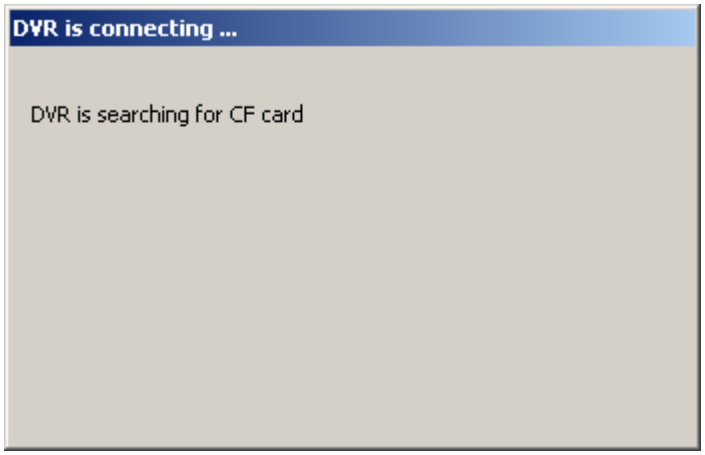
DVR Desktop can configure the video format, average bit rate, audio in, TV system, time stamp, Beacon, convert the recording video etc.

Start-Up DVR Desktop

DVR Desktop will detect CF card that you want to used in DVR, please connect CF card to PC via card reader before you start DVR Desktop.

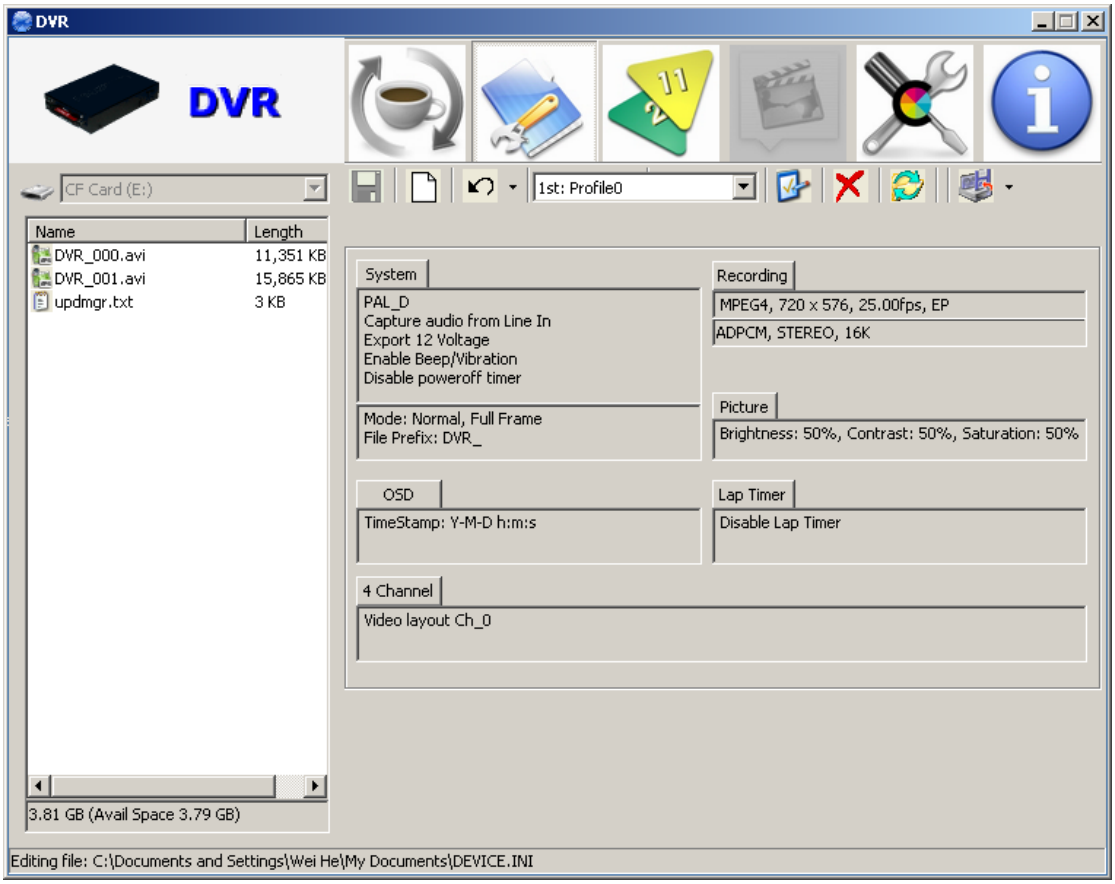
Connect CF card to PC via card reader in first, then double click to start-up DVR Desktop.

DVR Desktop will search CF card on PC.

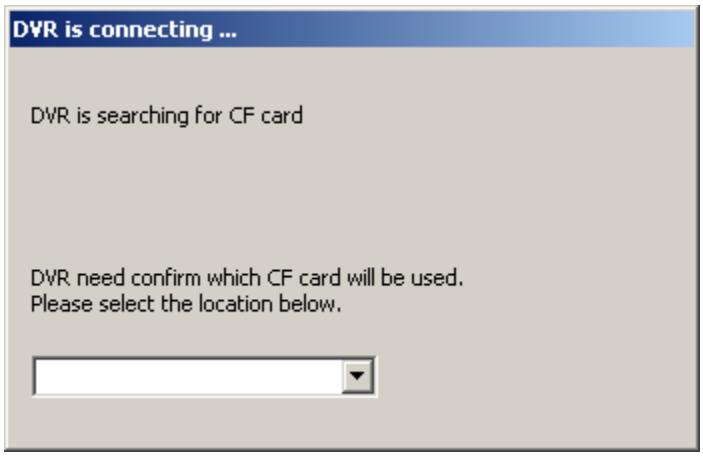


If CF card can't be connected to PC correctly or no CF card be connected to PC, DVR Desktop will display error message to prompt you connect CF card to PC correctly.

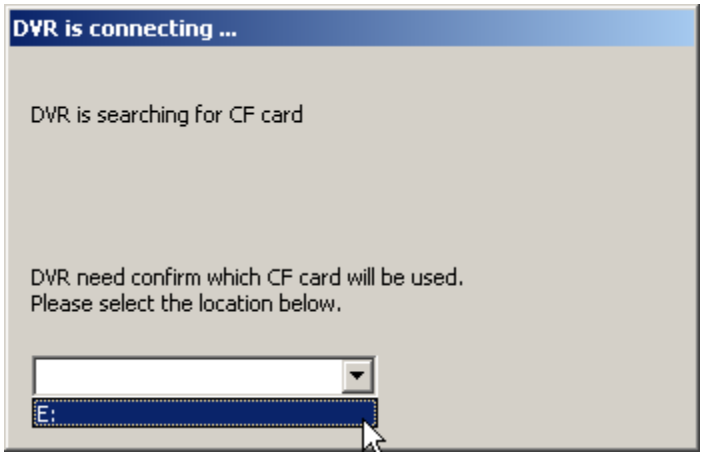
If CF card that you connect to PC had been used in DVR or be initialized by DVR Desktop, DVR Desktop will detect the DEVICE.INI file on the root directly of CF card, and DVR Desktop will start-up automatically.



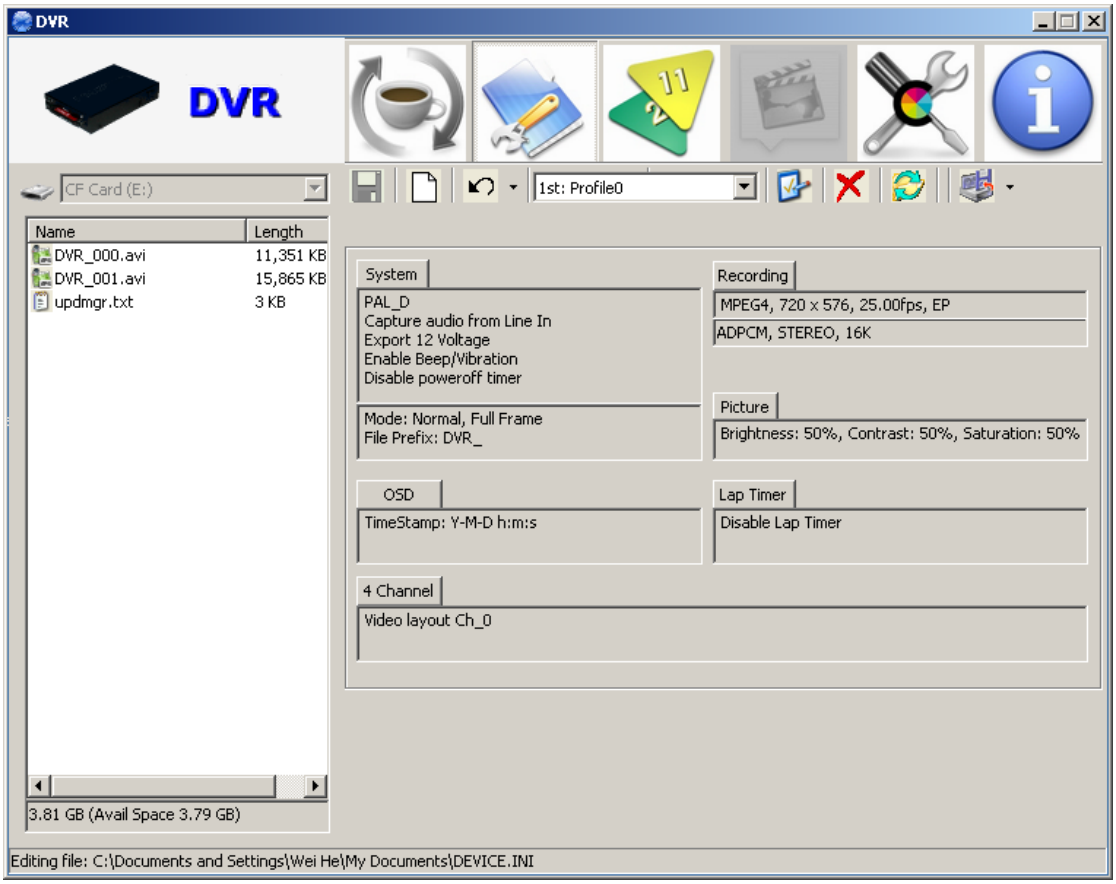
If DVR Desktop detect a new CF card, system will prompt you select a correctly disk that point to CF card.


DVR is connecting ...
DVR is searching for CF card
DVR need confirm which CF card will be used.
Please select the location below.

After you select correctly disk, DVR Desktop will initialize CF card and create DEVICE.INI configuration file on root of CF card automatically.

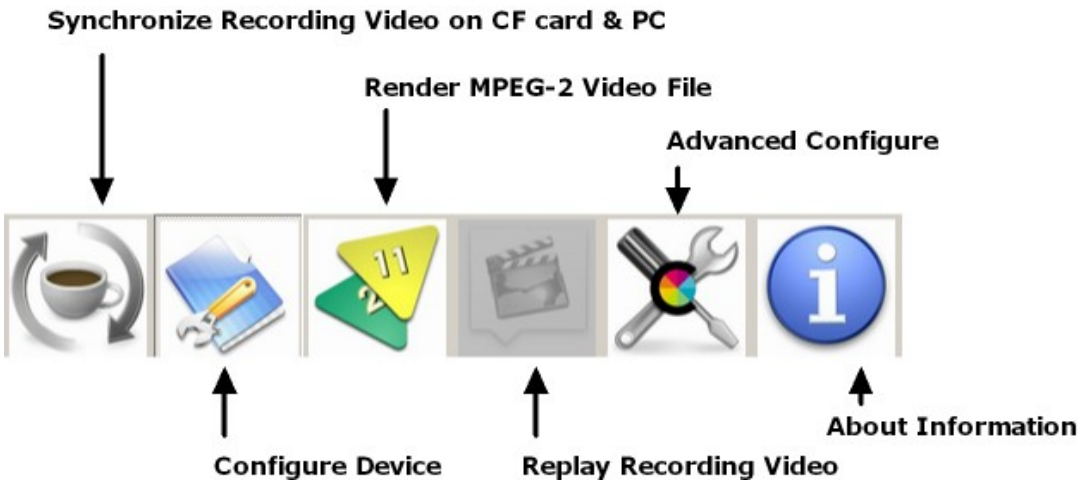

DVR is connecting ...
DVR is searching for CF card
DVR need confirm which CF card will be used.
Please select the location below.
E:

Once DVR Desktop finish initialization, it will start-up automatically.



DVR Desktop Description

DVR Desktop Title Bar



DVR Desktop include six part, you can using DVR Desktop to configure the video format, average bit rate, audio in, TV system, time stamp, beacon, convert the recording video etc.

Sync :
Synchronize recording video file on CF card & PC.

Device Configuration :
Configure DVR device.

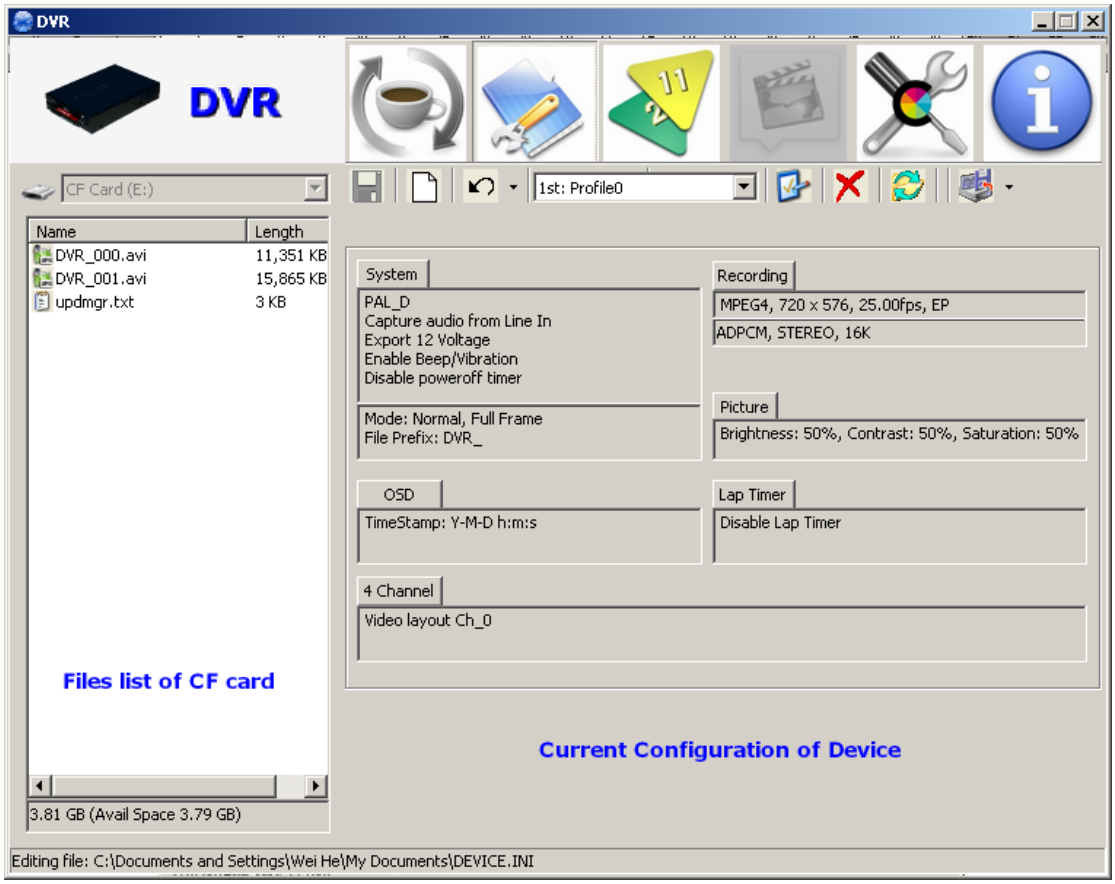
Conversion :
Render MPEG-2 data to standard MPEG-2 video.

Play :
Replay recording video on CF card or PC.

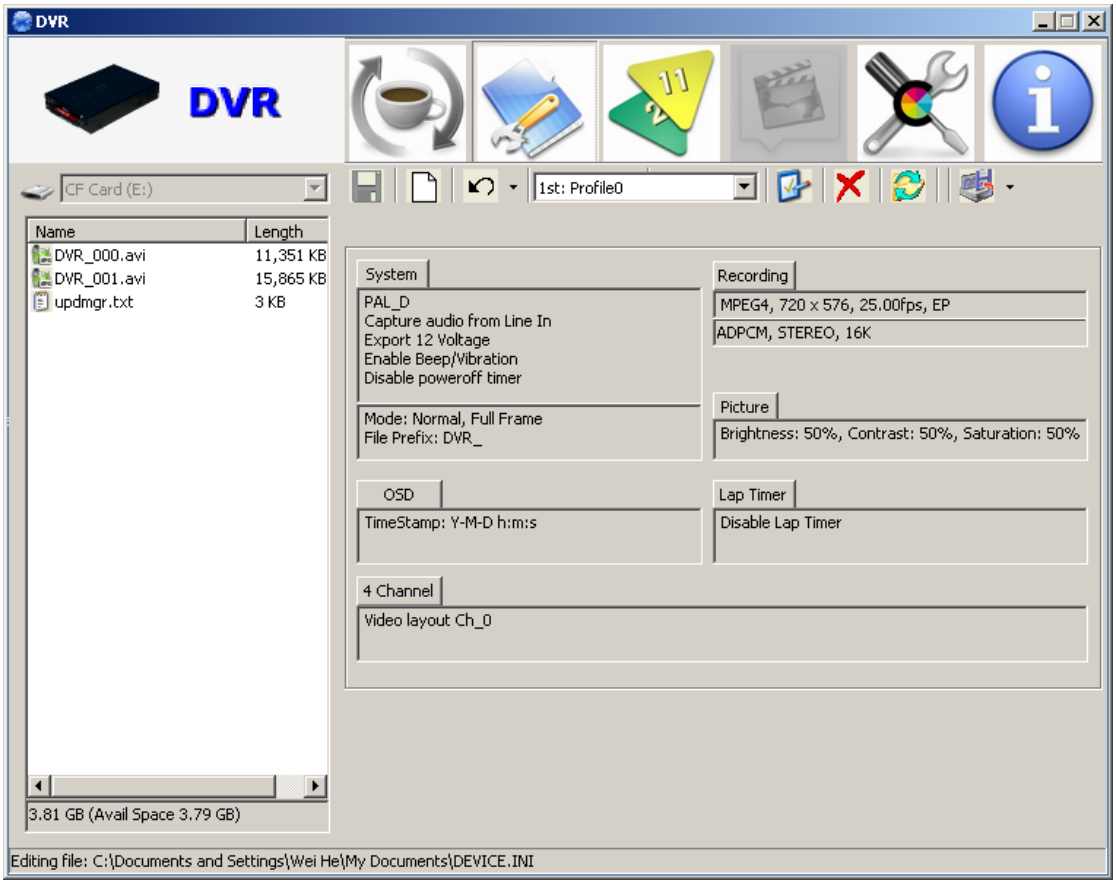
Advanced :
Advanced system configuration.

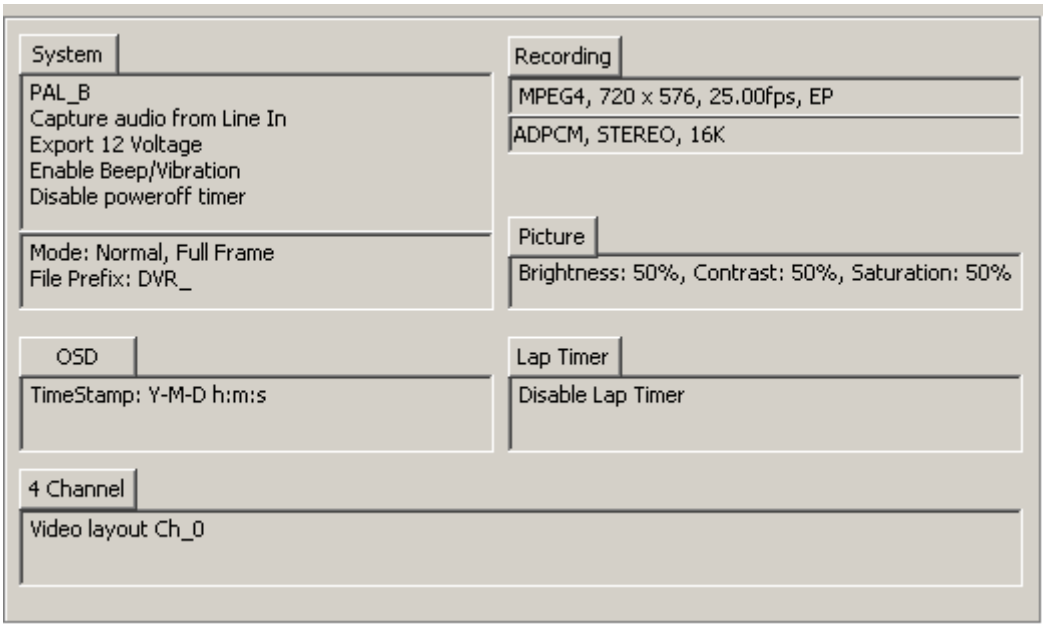
About :
Details information of DVR Desktop.

DVR Desktop Interface



Click **Device Configure** button on the title bar to configure the DVR.





Save, Cancel & Reset Setting

In all pop configuration menu, you can save, cancel or reset setting to default.

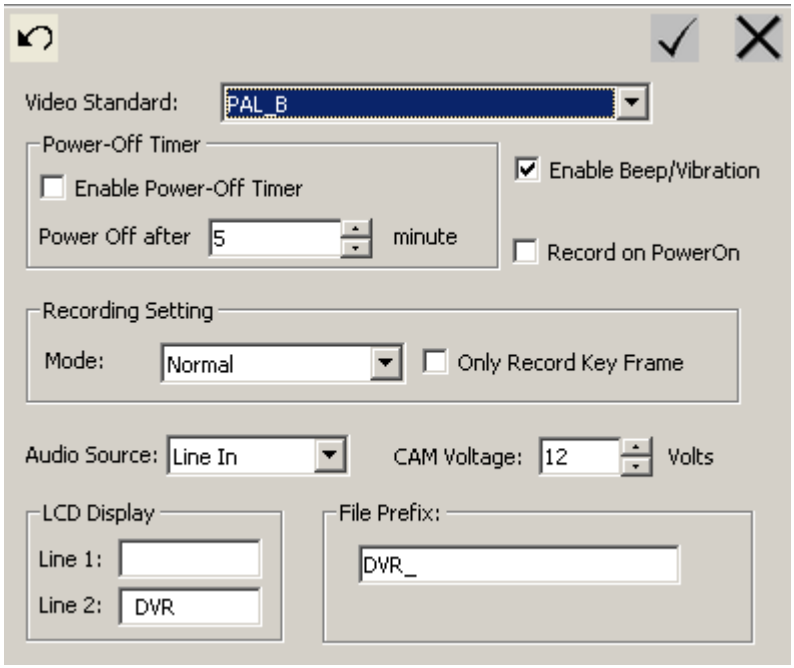
When you finish all setting, you can click **OK** button to save configuration & exit current configuration tab.

If you want to cancel current modification, please click **Cancel** button to cancel & exit current configuration tab.

If the configuration had been jumbled, you can click **Reset** button to restore configuration to default setting.

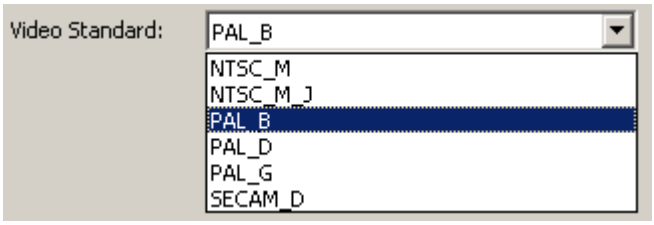
Device Configuration

Click **System** tab to configure DVR.



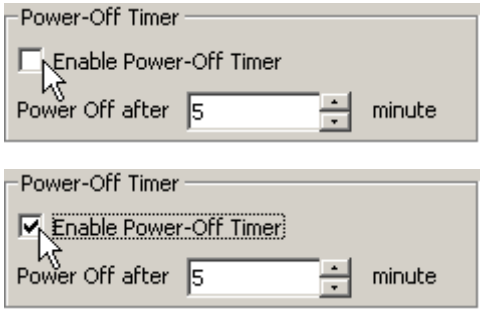
Video System

Please select correct video standard which corresponding to the video source of camera. Default video standard is now PAL D. It has to be changed for other video standard.

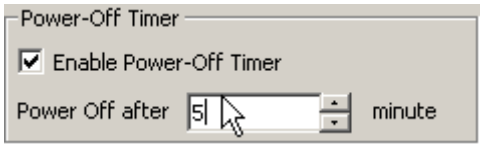


Power-Off Timer

To save the battery power, you can enable the DVR power off automatically depend on the timer that you set.



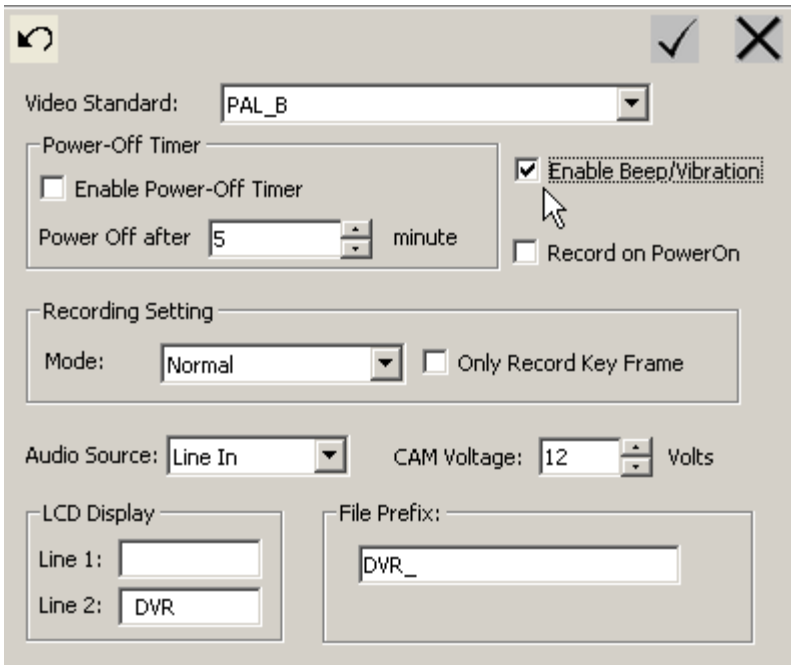
You can set the timer depending on your actual requirements.



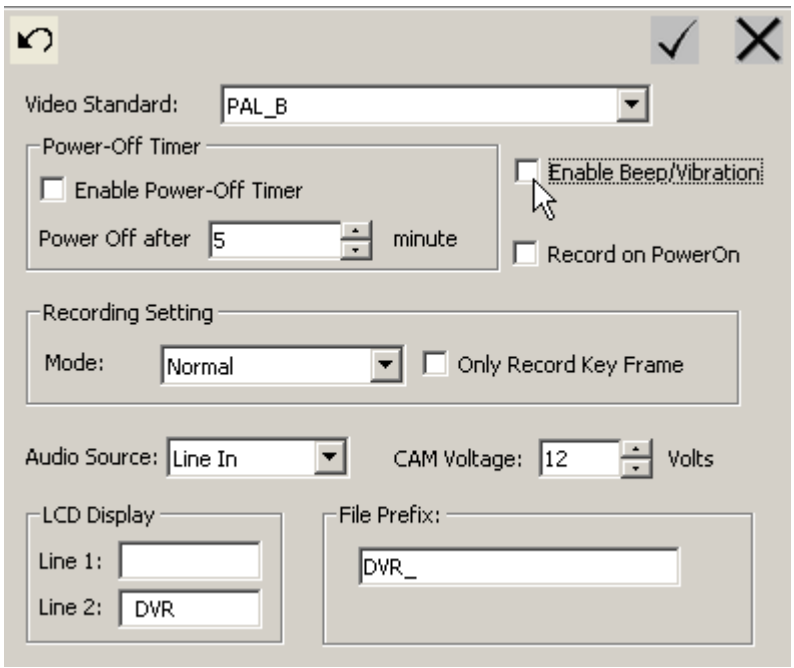
The default status of Power-Off Timer is disable.

Beep/Vibration

DVR will beep or vibrate to warn you when it starts or stops recording, In some special applications or occasion/environment, you may want to turn this function off, you can disable beep/vibration function.



The default configuration is enable beep/vibrate feature, you can disable it in DVR Desktop.

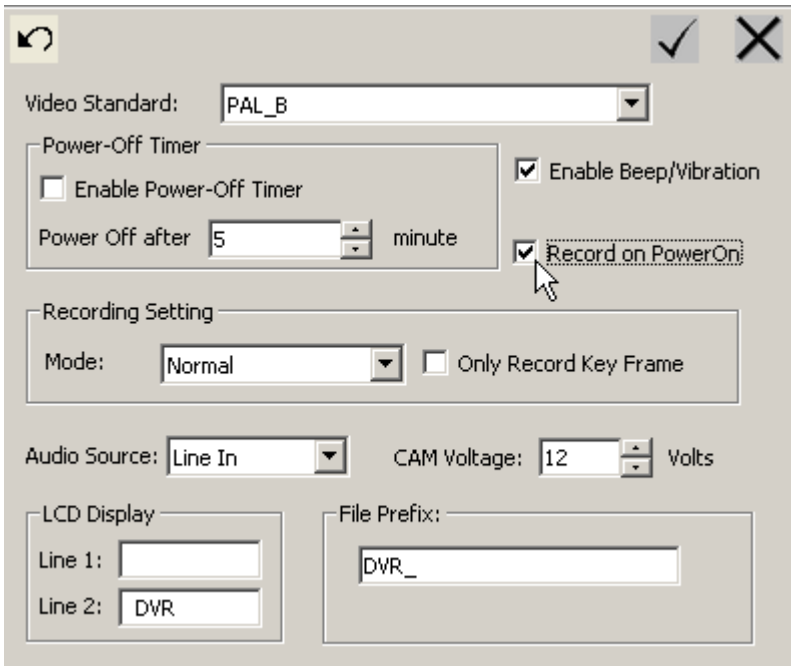


Switch off Enable Beep/Vibration options in DVR Desktop to disable it, now you can operate DVR in silent mode.

Record on Power On

In some applications, you may need the DVR to record automatically once the DVR is powered on.

You can switch on the **Record on PowerOn** option in the DVR Desktop.



The default status of record is manual record via IR remote control, LANC remote control or push button.

Recording Setting : Normal, Cycle Record & Key Frame

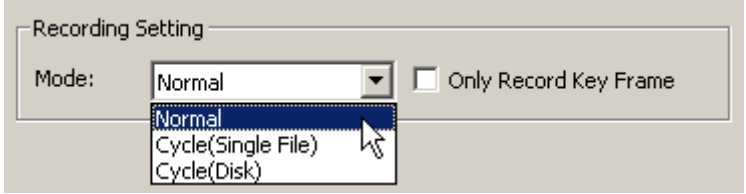
You can configure the DVR in normal record or cycle record mode.

1. Normal Record Mode

In normal record mode, DVR will record video & save recording video in multi-single video file, the maximum size of single recording video file is 2GB depend on limit of system.

The default of record mode is Normal mode.

You can select Normal **Record Mode** option to enable normal record mode if current configuration is cycle item.



If you want to use DVR in a surveillance application, you can set the **Record Mode** to Cycle Record mode.

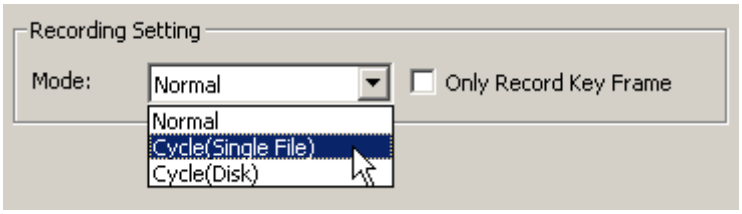
2. Single File Cycle Record Mode

The DVR has two cycle record modes, Single File Cycle Record & Full Disk Cycle Record mode.

In Single File Cycle Record mode, the DVR will save recordings in single file only, the maximum size of single recording video file is 2GB, when video reaches the 2GB limit, the system will save the new recordings from the begin of recording video file.

If your CF card is smaller than 2GB, the DVR will save recording video in single file only, when CF card is full, system will save the new recorded video from the beginning of the recorded video file.

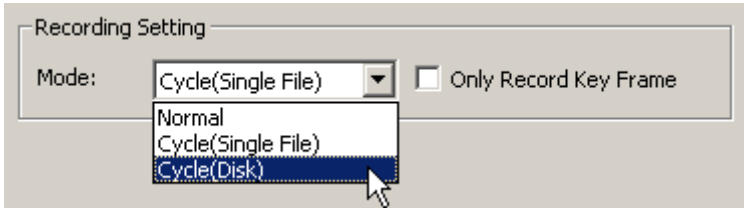
You can select Cycle (Single File) item in **Record Mode** option to enable Single File Cycle Record mode.



3. Full Disk Cycle Record Mode

In Full Disk Cycle Record mode, the DVR will record continually, when the CF card is full, the DVR will record the video overwriting the oldest recorded file.

You can select Cycle (Disk) item in **Record Mode** option to enable Full Disk Cycle Record mode.



If you set the DVR in cycle record mode, all old recorded video file on the CF card will be deleted on system startup.

4. Only Record Key Frame

If you want to record video in surveillance application, you can record key frame only to decrease the size of recording video & increase recording time for a same CF card.

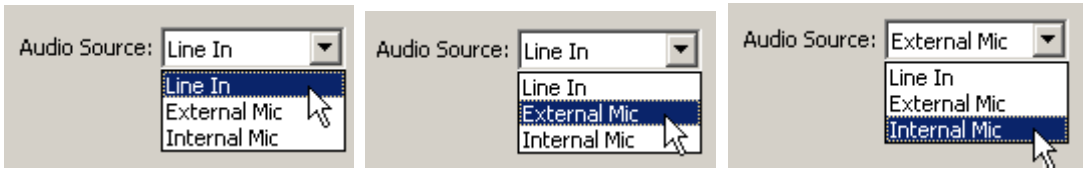
In this option, DVR will record 1 frame per 15fps. In PAL video standard, approx 3 frame per 2 second be saved; in NTSC video standard, approx 2 frame per second be saved.

If you select this option, system will save video only and that the sound will be forsaked.

NOTE : The option is only for MPEG-4.

Audio Source

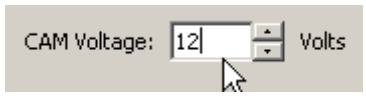
Please select the correct audio in setting which is based on your actual audio input. Default audio source is Line In, you need to select External Mic if you use an external microphone, or you can select Internal Mic item if you use the internal microphone in DVR.



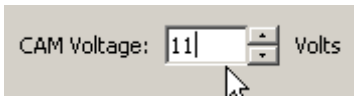
The External Mic & Internal Mic option will increase gain of volume.

Output Voltage

DVR can power external device via power output adapter on IRIS-RCA jump cable, you can power external bullet camera or external LCD monitor, you can adjust output voltage from 9V to 12V.



If you want to power external bullet cameras more than one, please set the output voltage lower than 11V, and you need connect AC power adapter for DVR.



LCD Display

You can customized the LCD message.

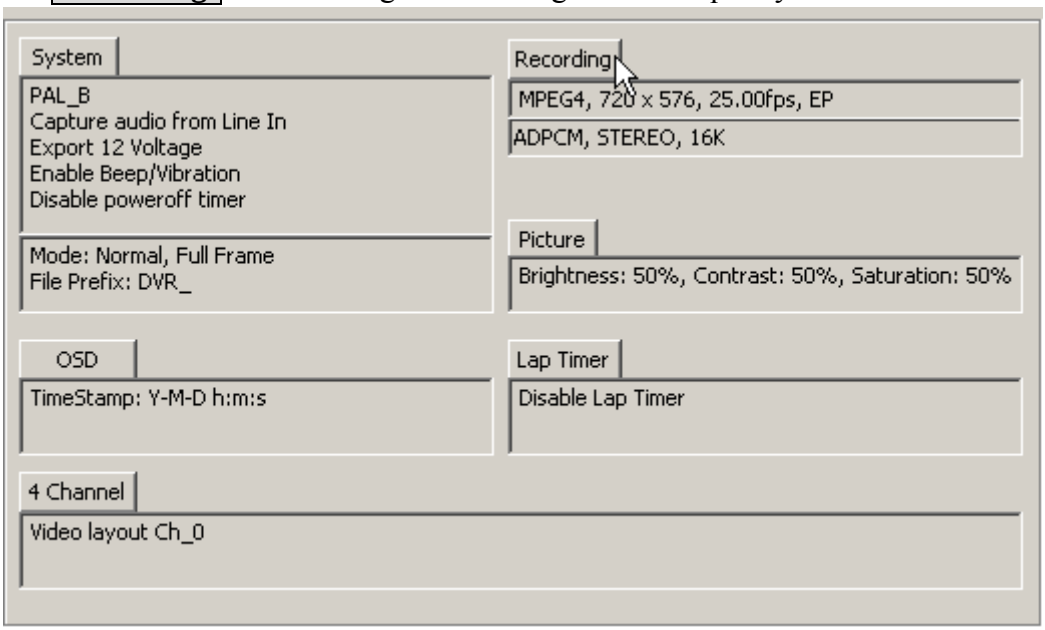
The maximum character of characters of every line is 8, you can use printable characters only & exclude the character "~".

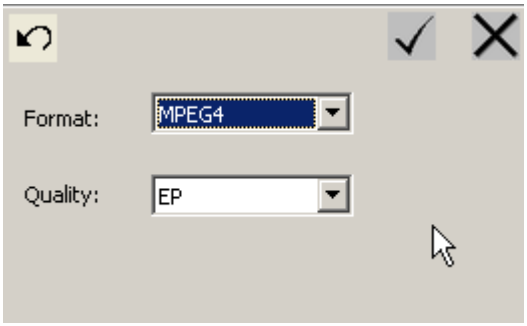
Video File Name

Record file name starts with DVR_ by default. The file name will be DVR_xxx.avi. XXX is incremental from 000 to 999. The prefix DVR_ can be modified in DVR Desktop.

Recording Format & Quality

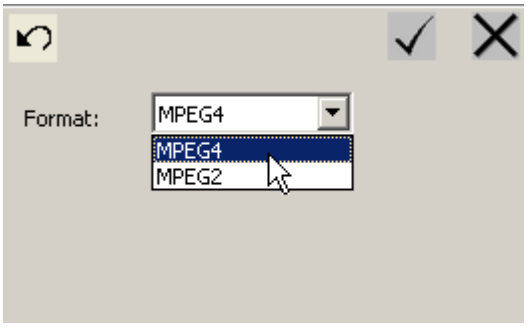
Click **Recording** tab to configure recording format & quality.





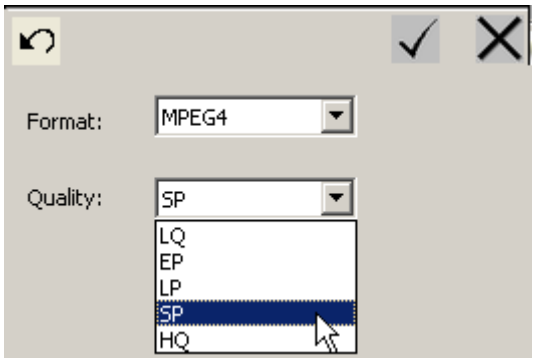
Video Format

Select MPEG-2 or MPEG-4 format for your recording video.



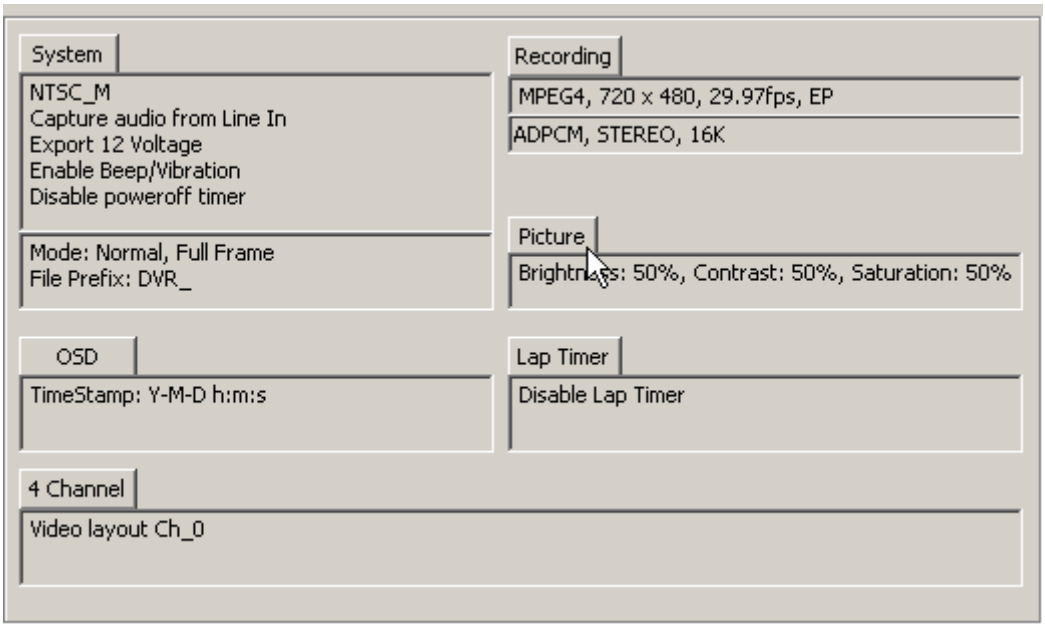
Video Quality

Select proper video quality based on the scene and required. Please refer to Video Quality section.

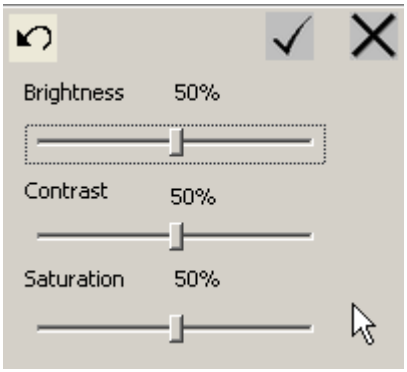


Picture Adjust

Click **Picture** tab to adjust picture of recording quality.

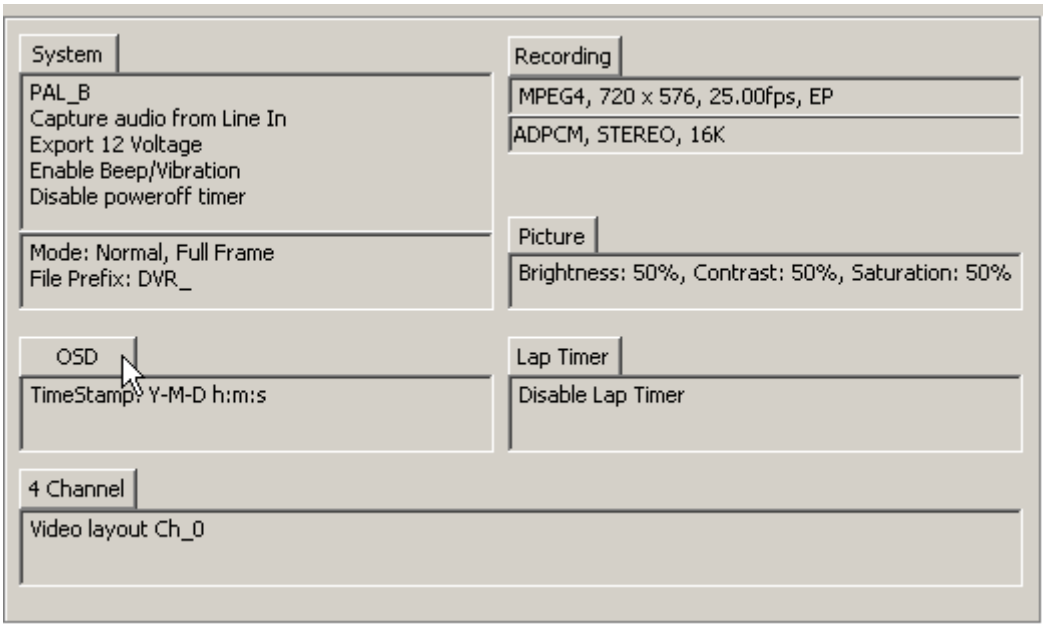


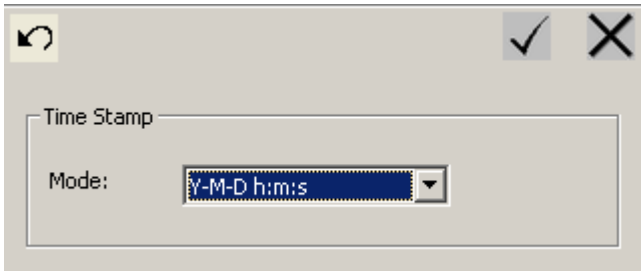
You can adjust the brightness, contrast & saturation of the picture to get the best quality. The default value is 50%.



OSD Configuration

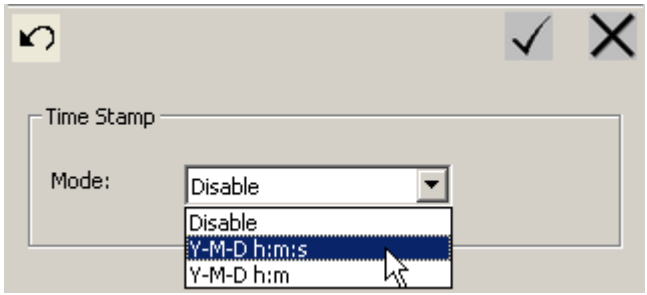
Click **OSD** tab to configure Time Stamp & OSD information.



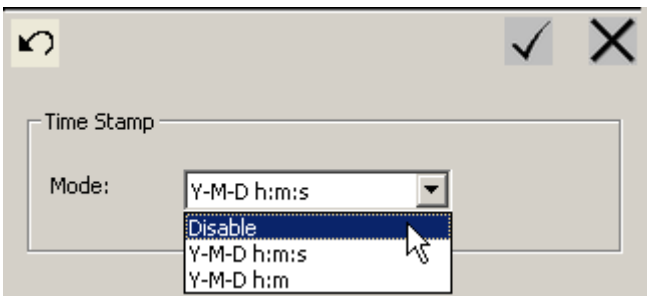


Time Stamp

You can enable time stamp in two formats to stamp your recorded video with real date & time.



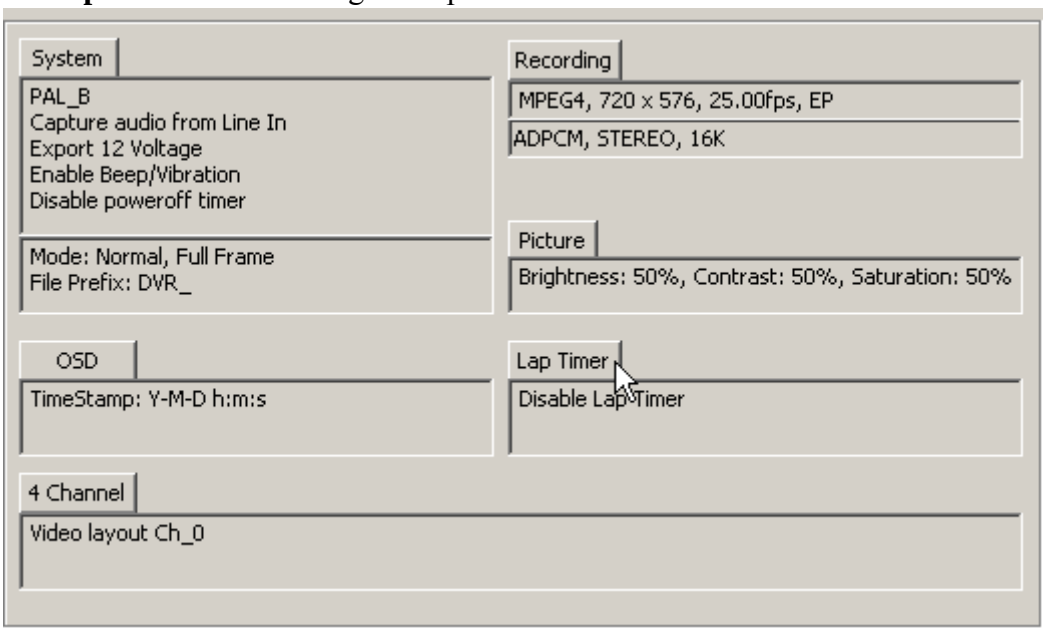
Certainly, you can disable Time Stamp features if you don't need record date & time in your recordings.

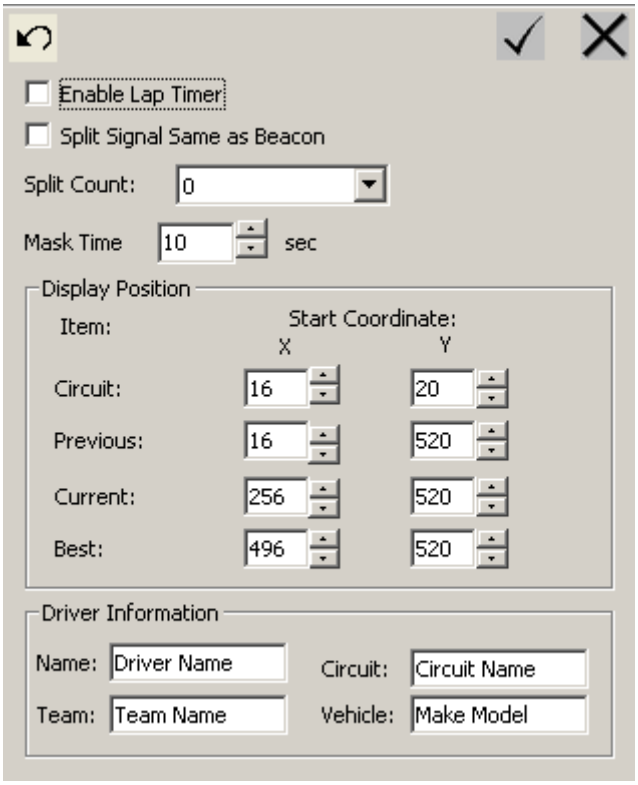


In DVR, priority of Beacon is higher than Time Stamp, the Time Stamp will be disable at once when the Beacon is enable.

Configuration of Lap Timer

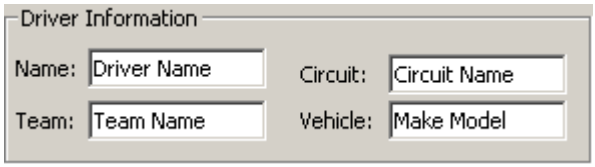
Click **Lap Timer** tab to configure Lap Timer.





Set Driver Information

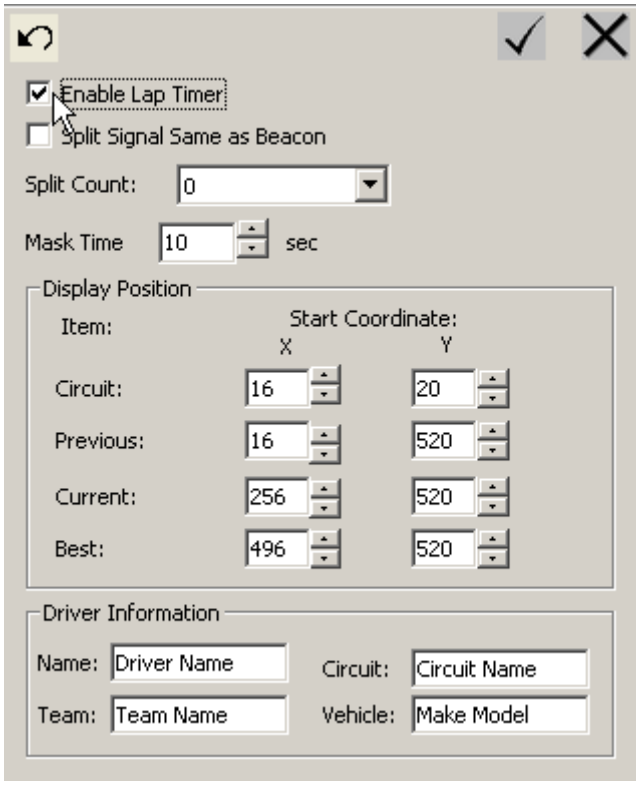
After enable Lap Timer function, you can record driver name, team, circuit for racing, make & model of vehicle in racing on screen of recording video.



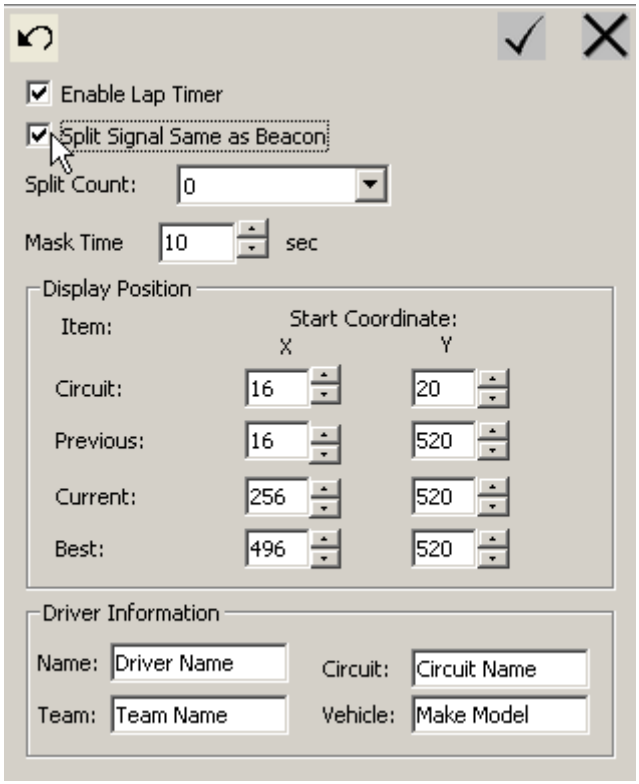
You can modify these information based on actual details information.

Beacon & Split Beacon

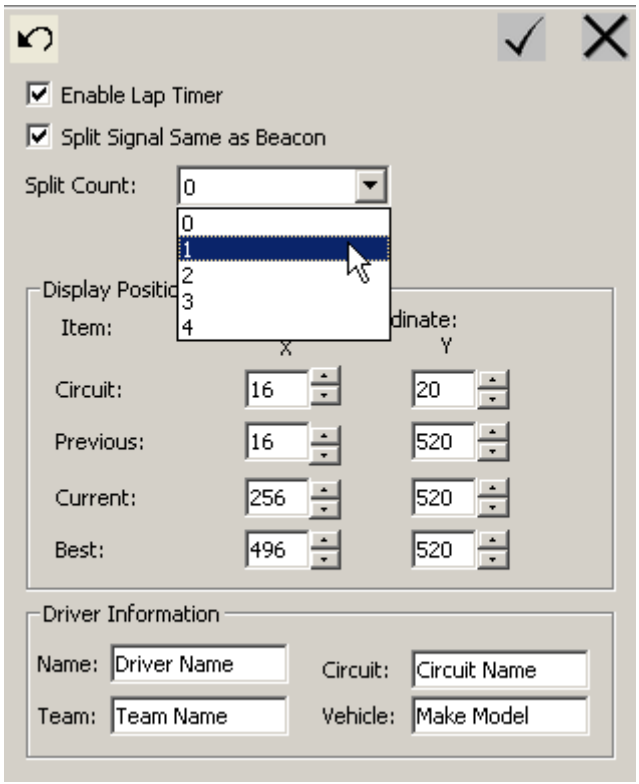
Set **Beacon Enable** to receive Beacon signal. The default is disable.



If you use Split Beacon on racing, you must switch **Split Signal** option to enable it.

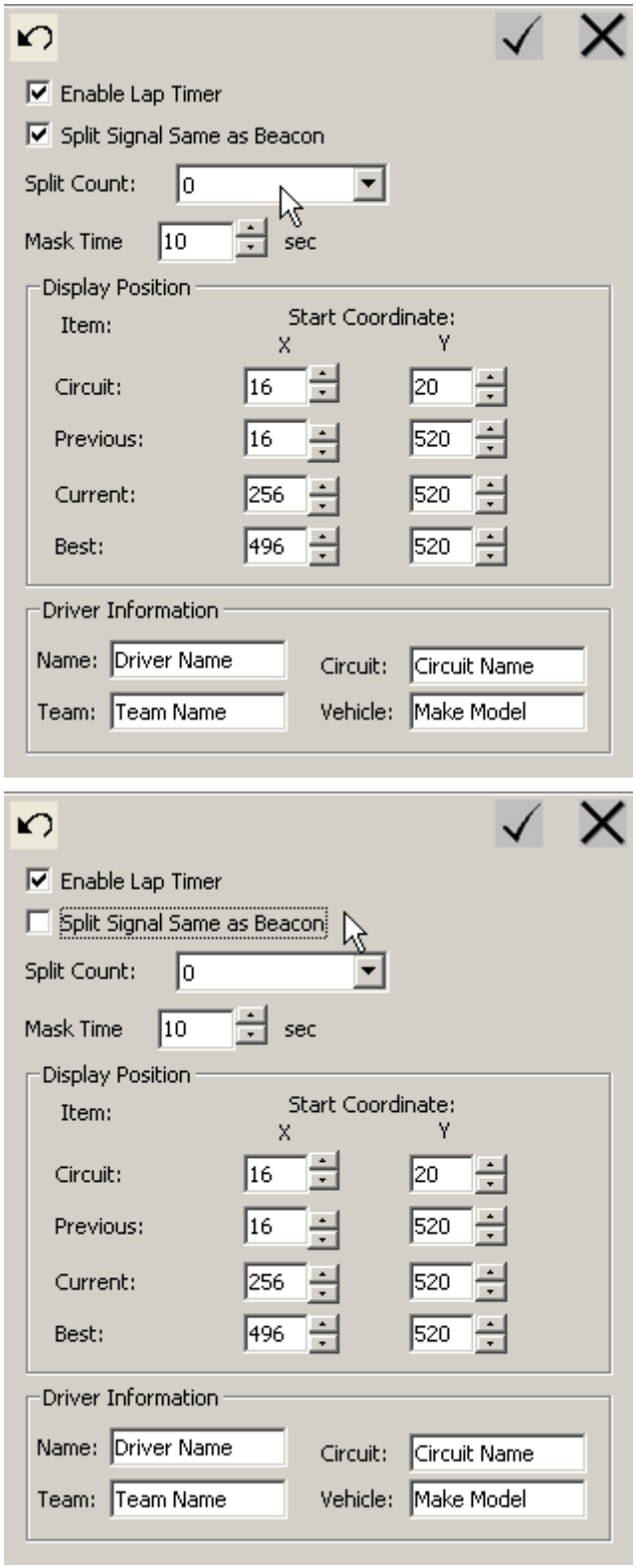


You can select the amount of Split Beacon for every loop, the maximum amount of Split Beacon is four on every loop.



If you don't use Split Beacon emitter on racing, please set the amount of Split Beacon emitter to zero or disable **Split Beacon** option directly.

The default configuration of the amount of Split Beacon is zero.



DVR can record most 129 loop Lap Timer data on single recording video.

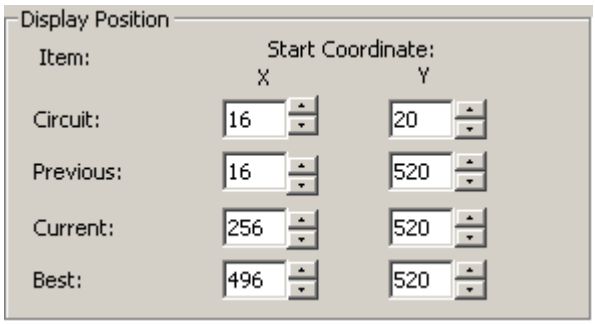
The **Time Stamp** will be disabled when you enable the beacon function.

The Beacon Configuration option is only for the special edition of DVR with Lap Timer function.

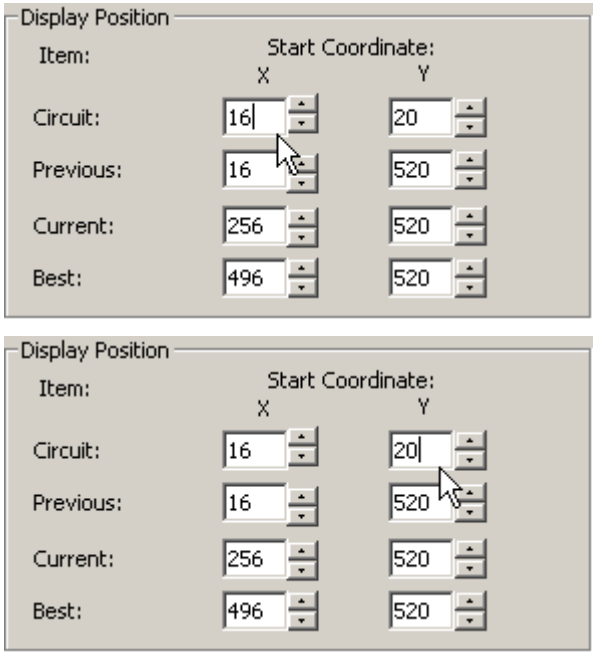
Adjust Position of Lap Timer Data on screen

You can adjust position of Lap Timer data on screen to fit different requirement & playback device.

You can adjust the position of all Lap Timer data item.



Select item of Lap Timer data that you want to adjust, then set the value of X & Y coordinate on input area.



The unit of X & Y coordinate is pixel, the value bound is 720x576 of PAL & 720x480 of NTSC video standard.

Repeat above process to configure all position that you want to set.

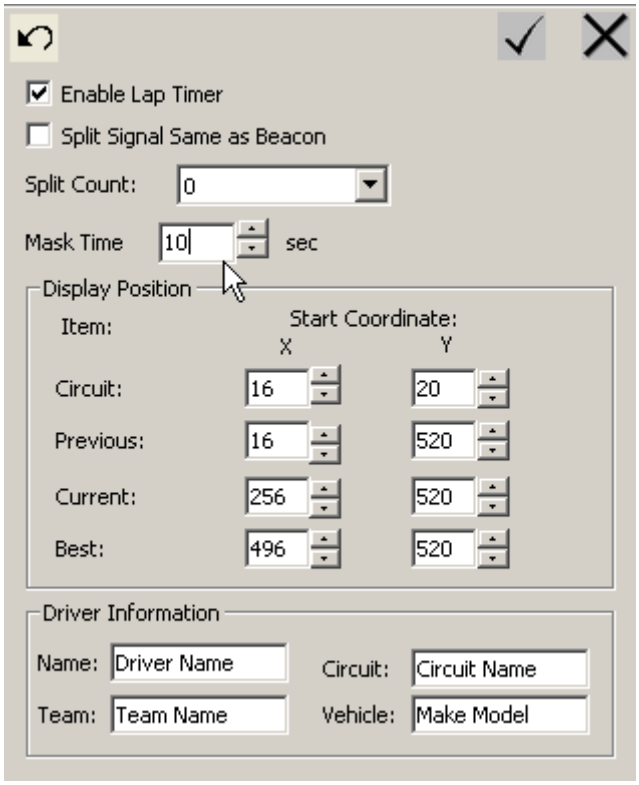
Connection

Simply connect the External Beacon Receiver into the Beacon jack on the DVR and point the External Beacon Receiver to the Beacon. The Lap Timer will start to work when Beacon signal is detected.

Mask Time

The Mask Timer is the time interval that DVR doesn't response after the detection of Beacon & Split Beacon signal. The default value is 10 sec. If the time interval of twice signal from Beacon & any Split Beacon emitter is small than Mask Time that you set, the second signal will be ignored by DVR.

When Split Beacon option be enabled, any Split Beacon emitter & standard Beacon emitter will be as alike signal emitter.



Recording of Lap Time

The time of each lap is record in the DVR_xxx.txt file. The file will looks like:

Hostname
Team WORKGROUP
Sport Motor
Scene Security

READY.. = 04:05.588

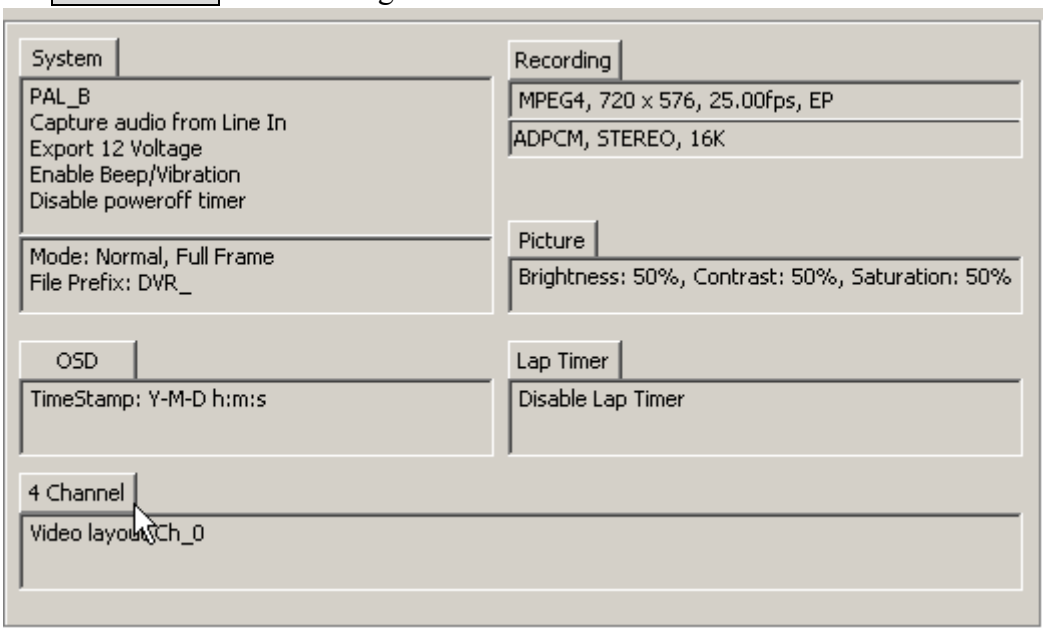
Summary:
Total Record Time: 04:05.588

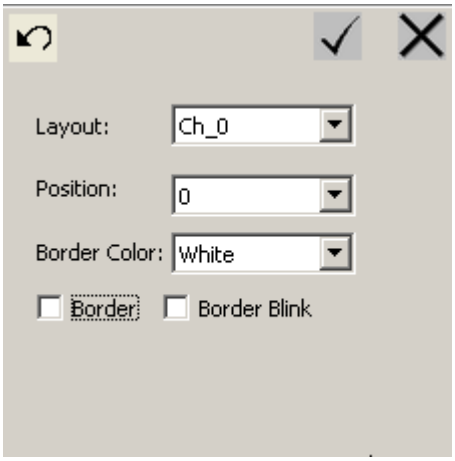
**** Lap Timer is not a standard function of DVR standard version, it is optional only for special version.***

Configure 4-Channel DVR

The 4-Channel DVR can connect four video inputs at the same time.

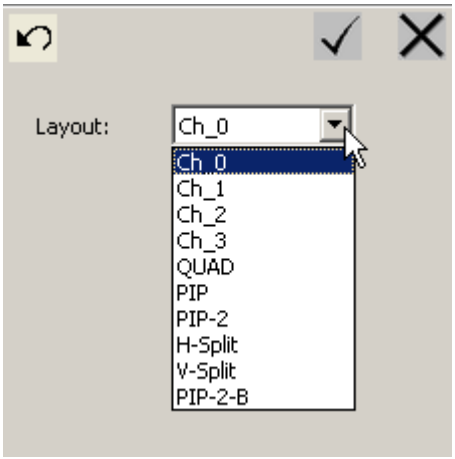
Click **4 Channel** tab to configure 4 Channel DVR.





Video Input

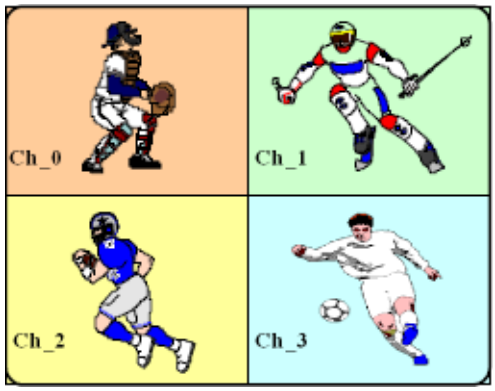
You can select 1, 2, 3 or 4 channel video input at the same time, and record these video in the same recording video.



In the 4 Channel area, pull down menu of Layout to select the video input source, amount of video inputs and video input arrange method.

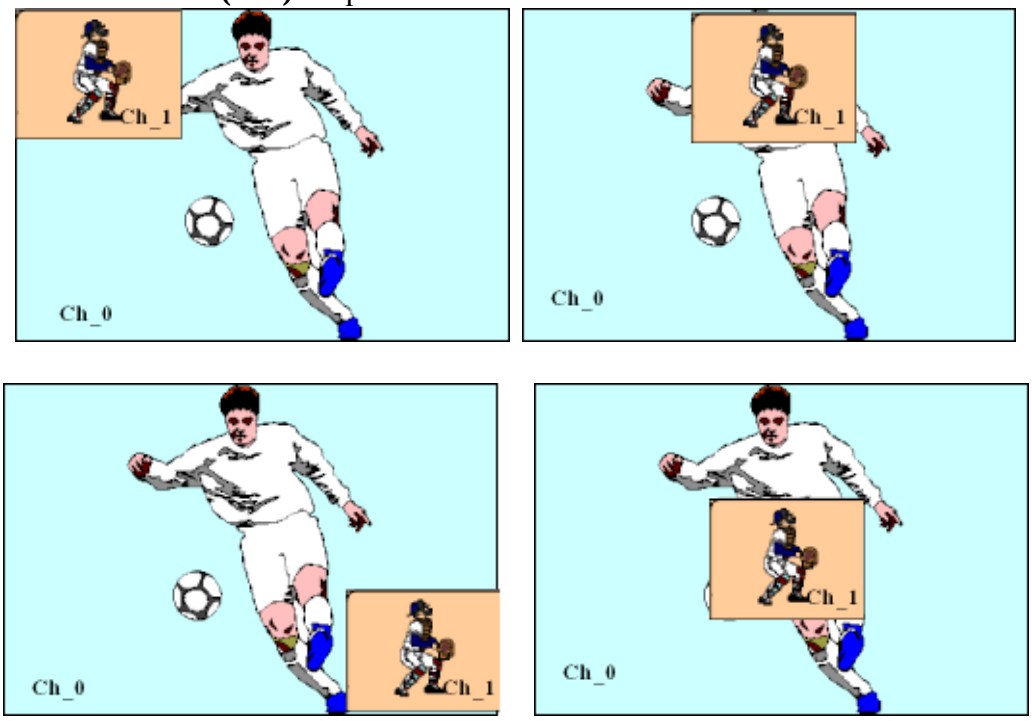
The **Ch_0**, **Ch_1**, **Ch_2** & **Ch_3** item mean video in 0 to video in 3 inputs are selected, this is for 1 channel recordings, you can select any video input that you want to record from.

If you want to record 4 channel video at the same time, please select **QUAD**. The recorded video will include 4 channel video in one video file.



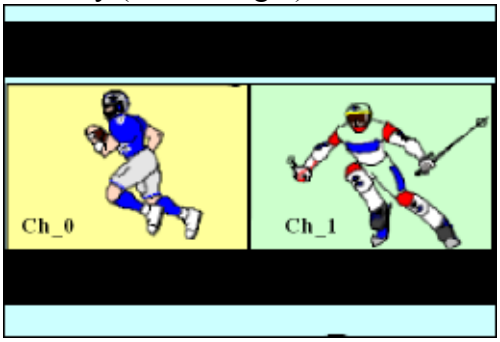
PIP item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file at the same time.

PIP mode supports nine different position beforehand, please consult the **Picture-In-Picture (PIP)** chapter for more details.

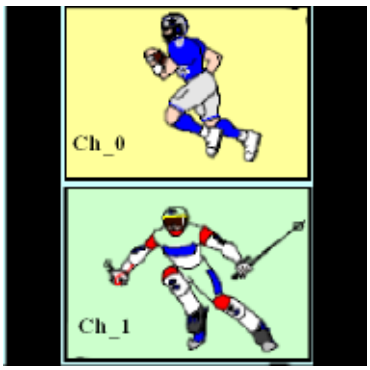


PIP-2 item is for 3 channel video input at the same time, the 3 channel video will be recorded in one video file at the same time.

H-Split item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file. **H-Split** item means the 2 channel video input array in recording video file horizontally (Left & Right).



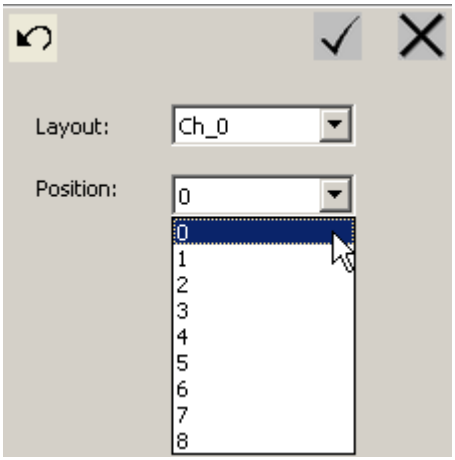
V-Split item is for 2 channel video input at the same time, the 2 channel video will be recorded in one video file at the same time. **V-Split** item means the 2 channel video input array in recording video file vertically (Top & Button).



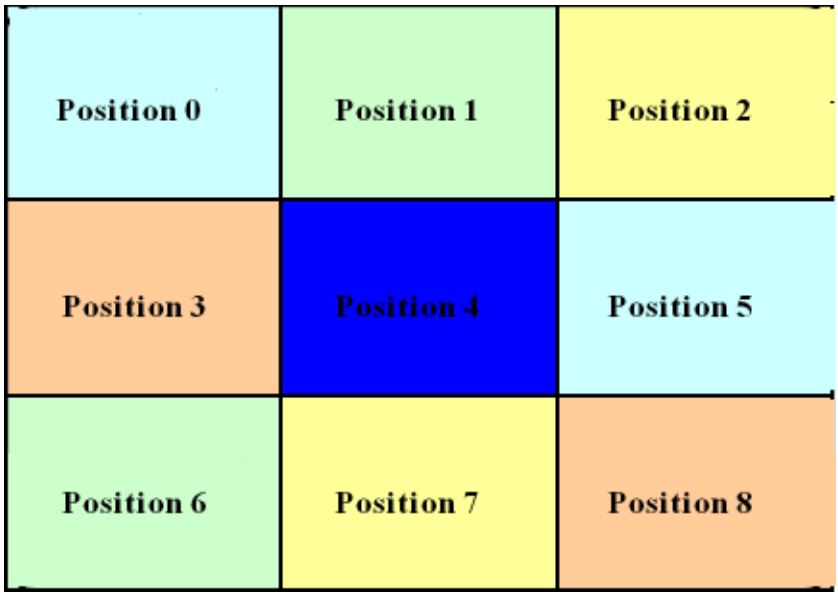
PIP-2-B item is another arrange method for 3 channel video input at the same time, the 3 channel video will be record in one video file at the same time.

Picture-In-Picture (PIP)

You can configure any position for PIP recording video, it has nine different positions, you can select any position for your requirement from **Position** option.



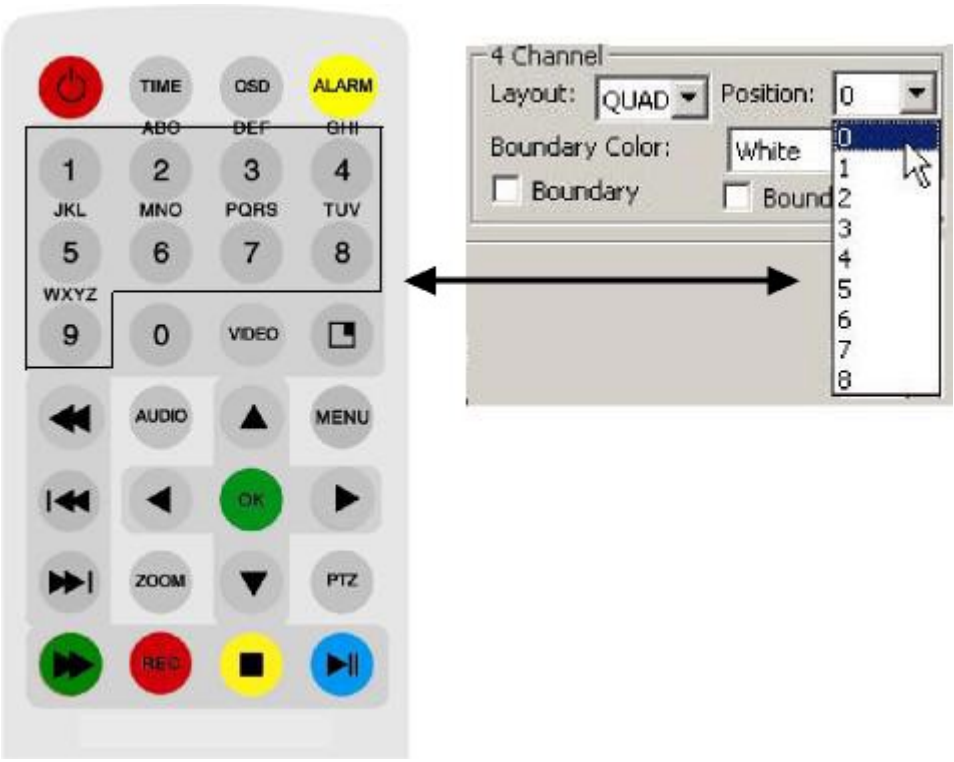
You can configure or switch the array method of Picture-In-Picture via the DVR Desktop & IR remote controller.



The numeric keys on the IR remote controller is can be programmed with 9 array methods of Picture-In-Picture, you can configure it & select any one array method as your default array using the DVR Configuration Utilities.

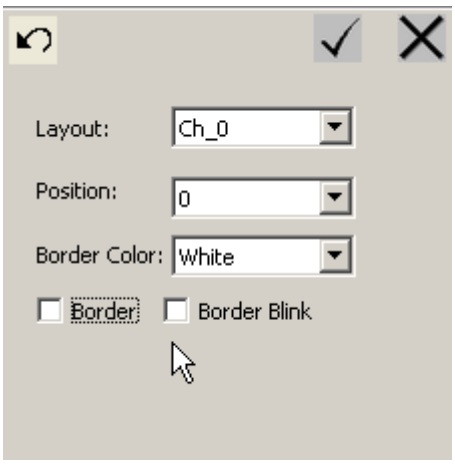
You can switch the array method using the numeric keys on the IR remote controller directly when you record the video using the 4 Channel DVR. The numeric keys 1~9 is controls the 9 items in the **Position** pull down menu.

Numeric Key on IR remote Controller	Item in Position Menu
1	Position 0
2	Position 1
3	Position 2
4	Position 3
5	Position 4
6	Position 5
7	Position 6
8	Position 7
9	Position 8

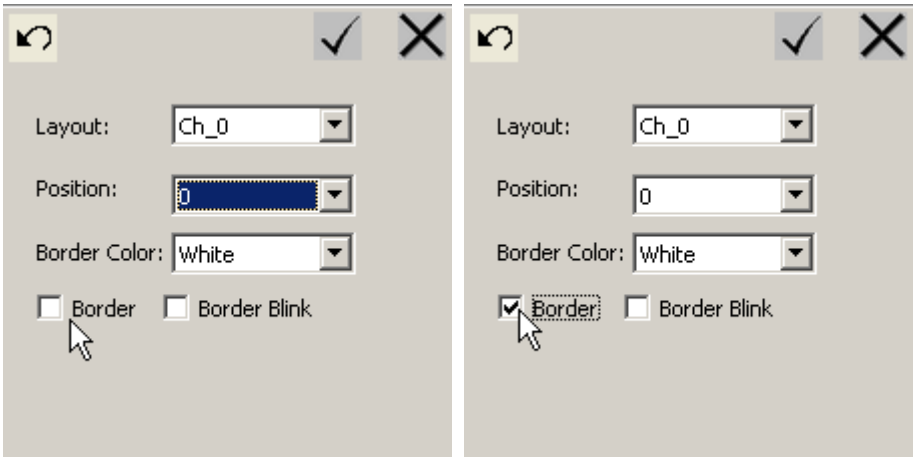


The Border of Frame

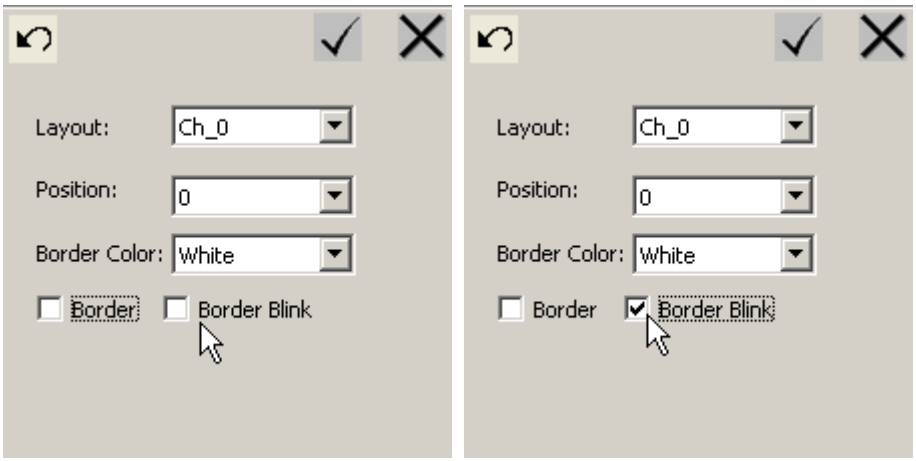
When you use 2 or 4 channel video input, you can enable/disable or select different styles of frame for a better scene effect.



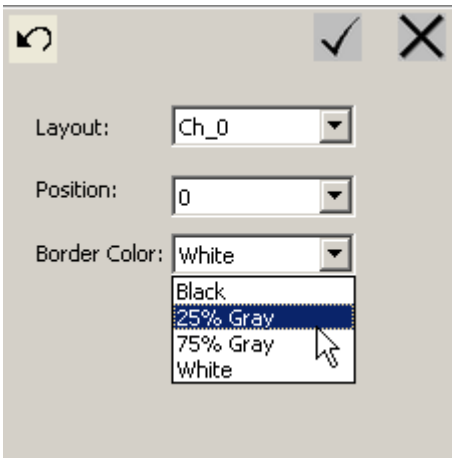
Switch on **Border** option to enable frame of video for Picture-In-Picture function.



At the same time, you can switch on **Border Blink** option to enable frame of video glint.



You can select 4 different styles of border frame.



Configuration Menu Output

4 Channel DVR supports analog output to TV or Monitor, when you connect a TV or Monitor to the Audio/Video Output, you can preview current video & the configure menu.

NOTE: This option is only for 4-Channel DVR, it is not supported by 1-CH DVR.

Multi Profile Item Configuration

Configure & Save Multi-Profile Item

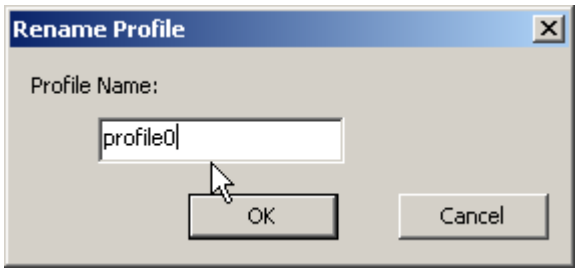
DVR support multi-profile for different application, you can save 10 different configurations into single configuration file, then you can switch to anyone profile between multi-profile via LCD menu in your application.

You can configure & save multi-profile item using DVR Desktop.

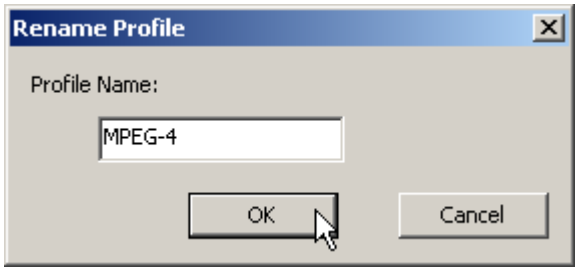
You can label every profile item using special name that be differentiated & remembered easily.

You can create, rename, delete & save profile item using corresponding button on button bar.

Click to name or name the first profile item.



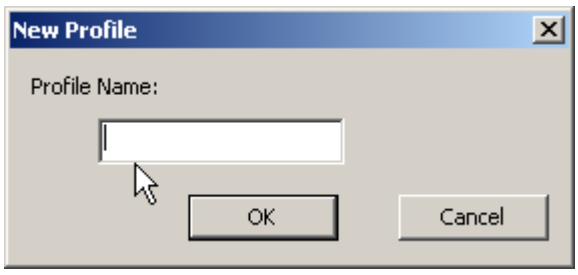
Input new name of the first profile item, then click **OK** button to save it.



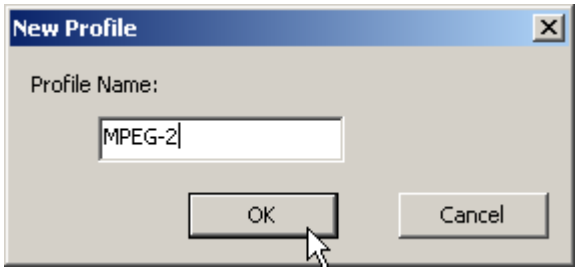
After you name or rename the first profile item, you can configure it that depend on your application or requirement.

To configure DVR, please consult **Configure DVR** chapter.

After you finish the first profile, please click to add new profile item.

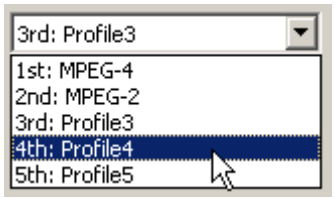


Input name of the second profile item in name area, then click **OK** button to save it.



Now you can configure the second profile item as same as for the first profile item.

You can select anyone profile item from pull-down menu to configure it at anytime.

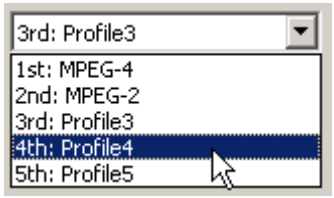


DVR Desktop can keep maximum 10 profile items for a device at the same time. Certainly, only one profile item is valid on once. You can switch one to another profile item via LCD menu.

After you finish configuration for all profile items that you set, you can click button to save all configuration.

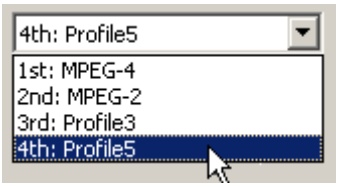
Delete Profile Item

If you want to delete anyone profile item, please select profile item that you want to delete from pull-down menu.



Then click to delete it.

After you delete anyone profile item, the profile item after it will ascend to current arrange position.

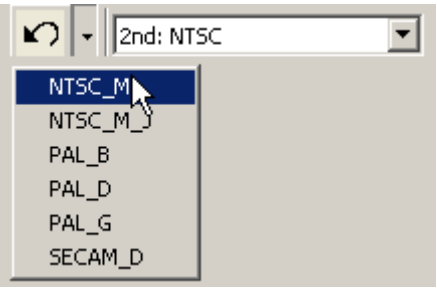


Load Old Configuration

If you want to cancel all current configuration, you can click to reload the last saved configuration, all changes that don't be saved will be lost.

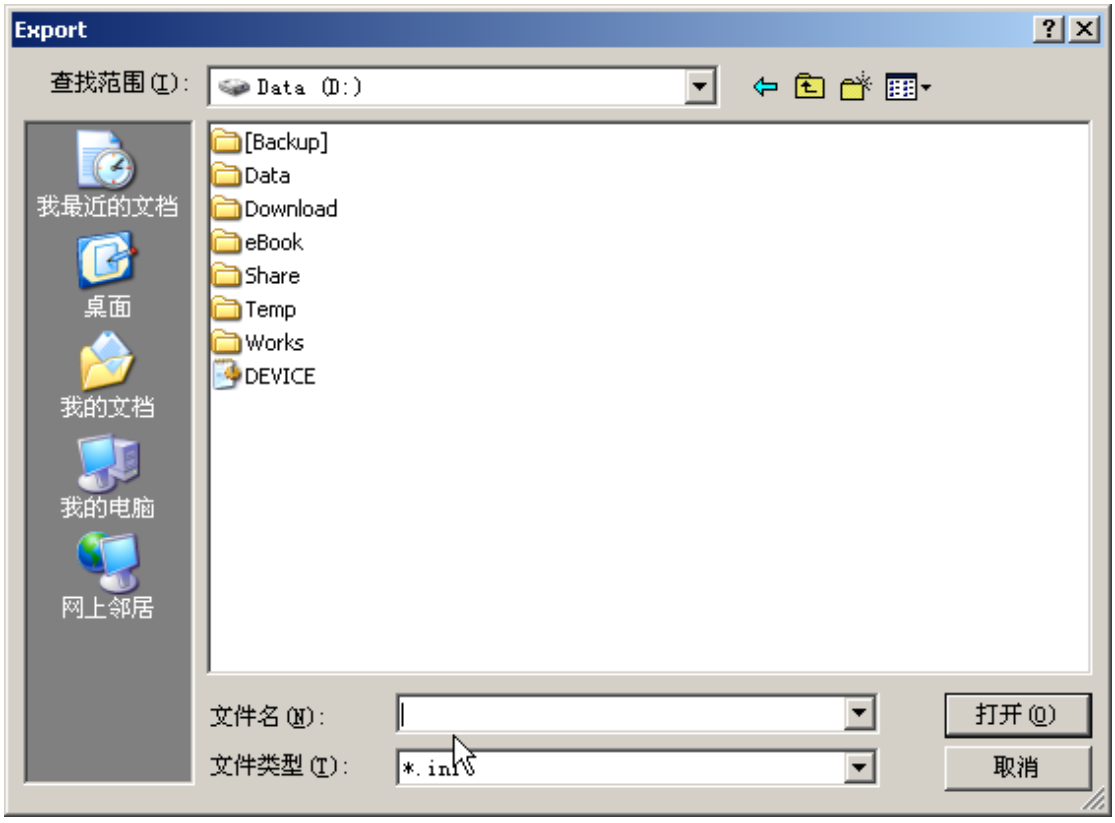
Get the Default Configuration of Special Video Standard

Sometime maybe you want to record different standard TV or video signal, you can set anyone profile item to special video standard, the resolution, frame & correlative internal parameter will be set to proper depend on the video standard, and the valid coordinate range of Lap Timer data display will be adjusted to proper position automatically.

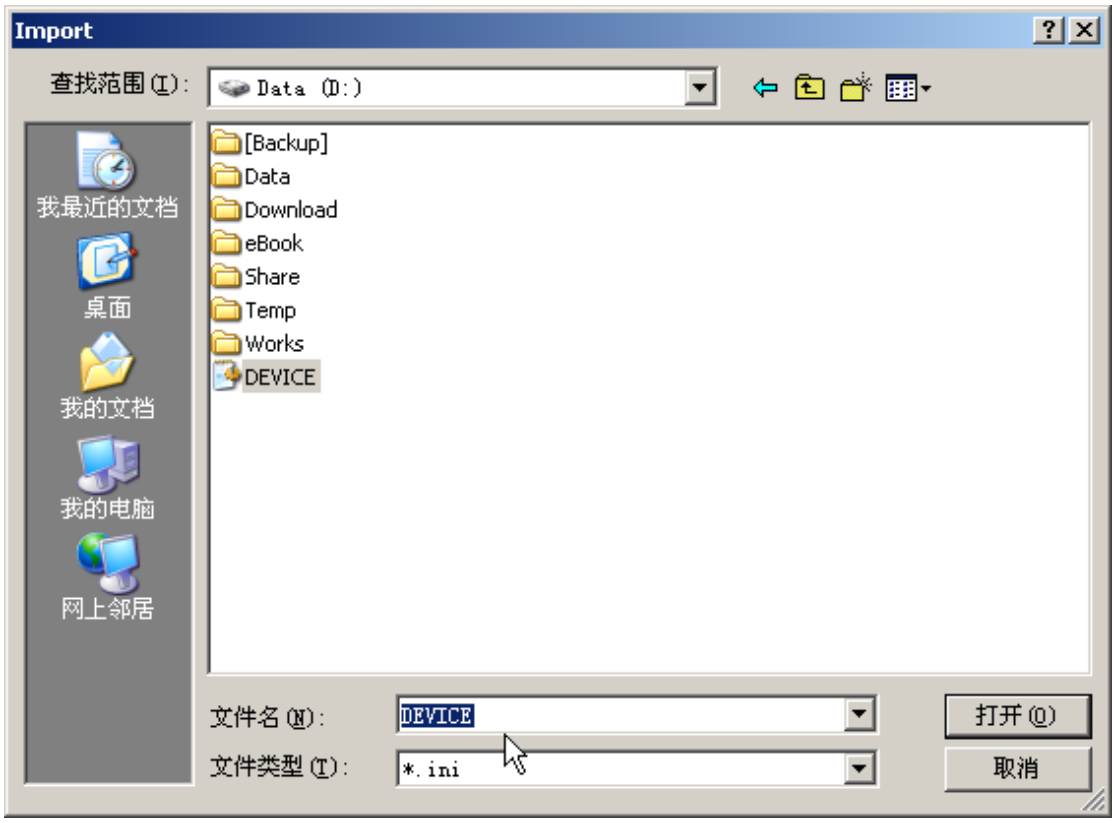


Backup & Restore Configuration File

When you finish configuration for all profile item, to avoid correctly configuration be lost or confused, after you save all configuration, you can export configuration file to appointed disk or folder.



You can import configuration file to restore DVR to configuration that you backup previously.

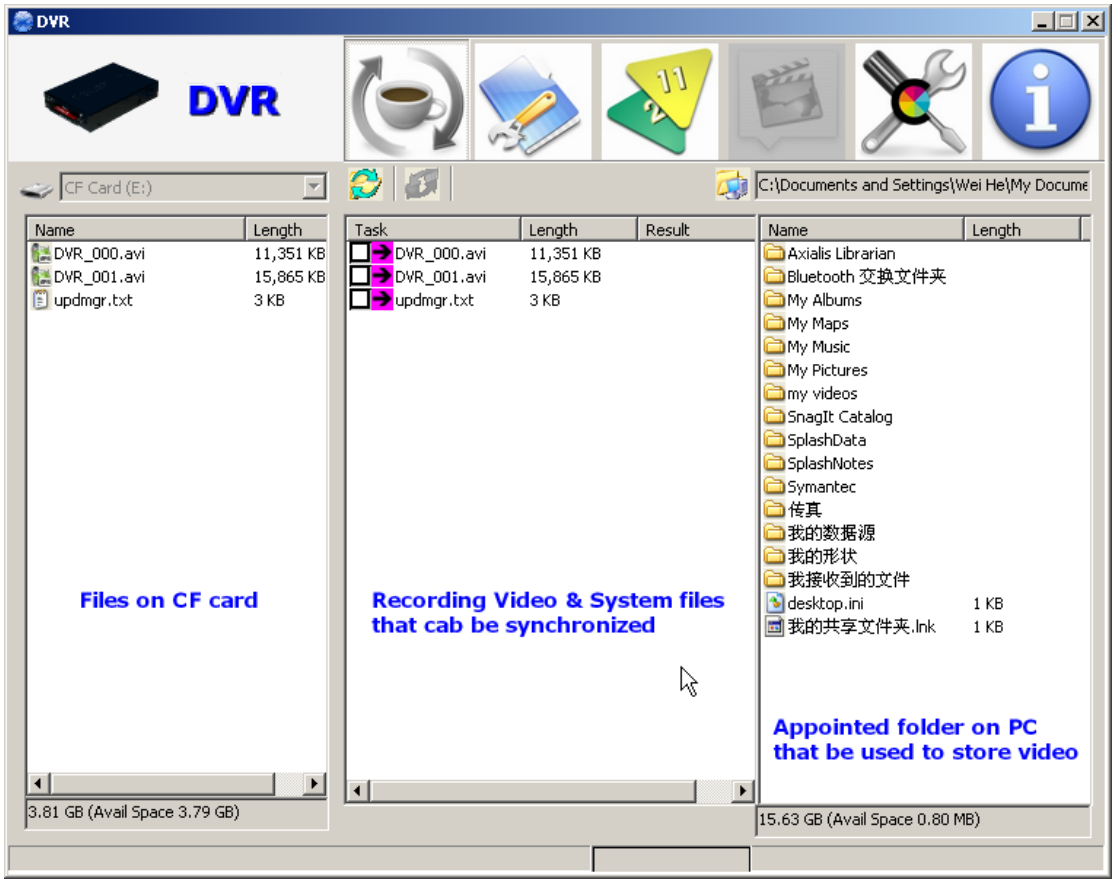


Switch Configuration Item

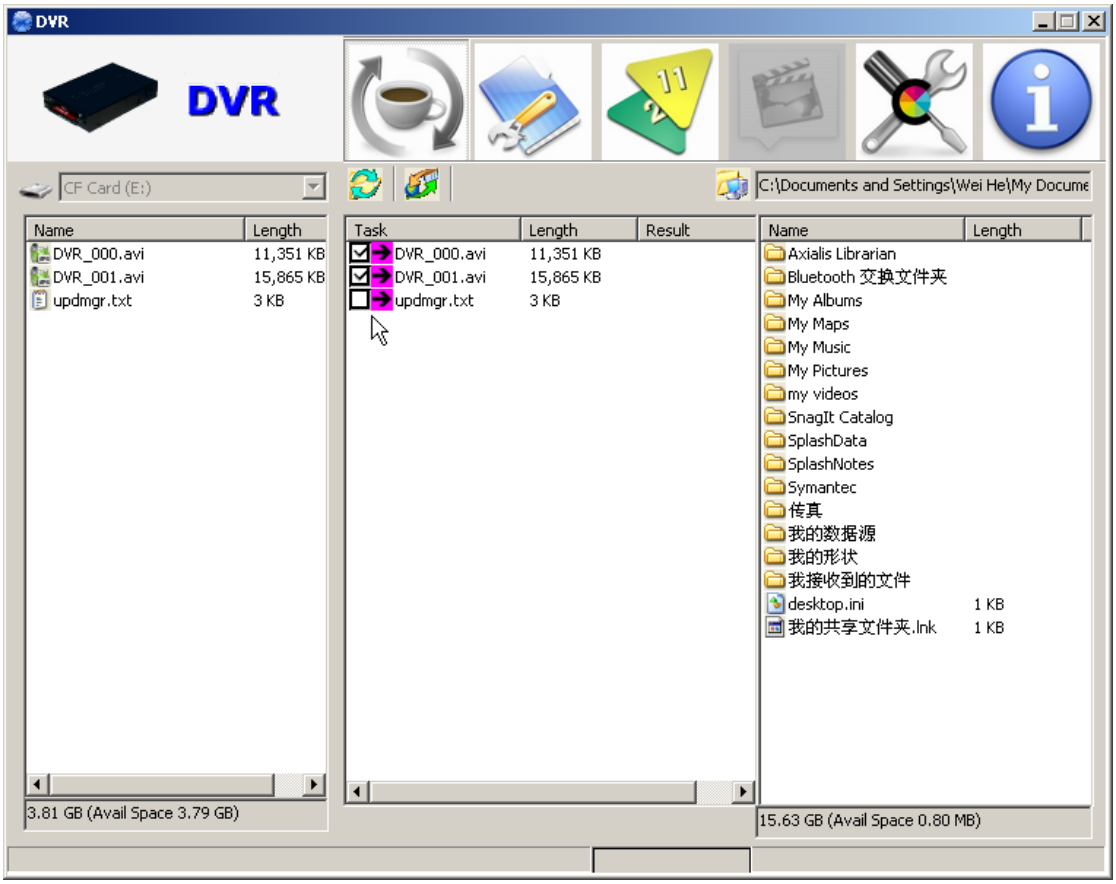
You can switch configuration item via LCD Menu during use DVR.

Synchronize Video between CF & PC

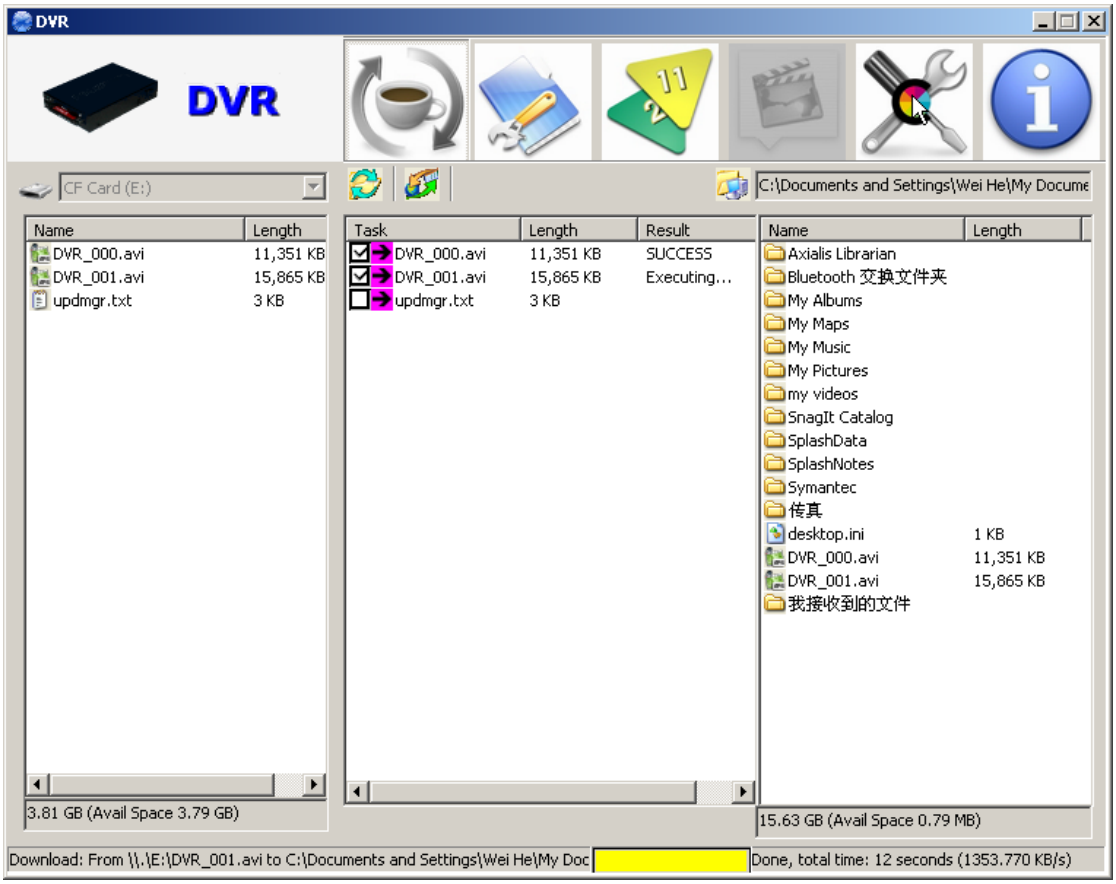
Click Sync button to synchronize the recording video between CF card & PC.



Please select files that you want to synchronize on task column.



After you select all files that you want to synchronize, then click Sync button to start synchronization.

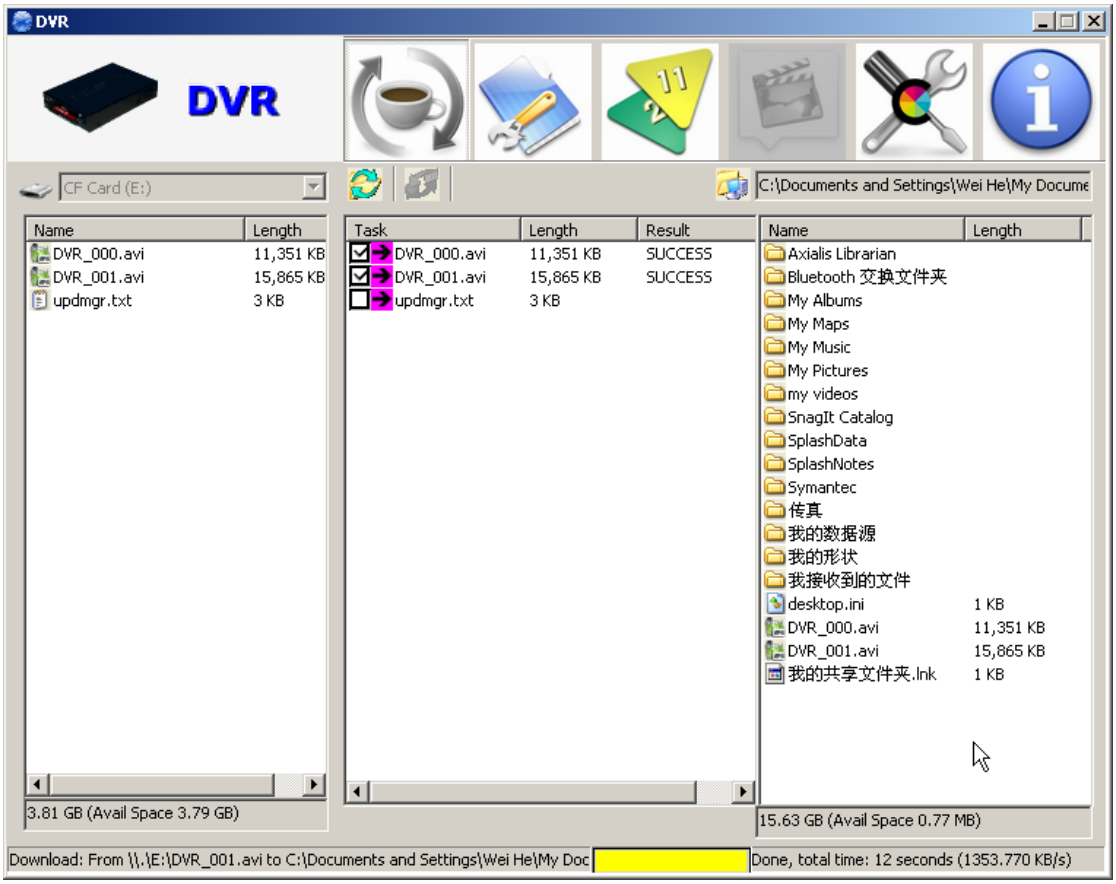


In task column, the result item will display status of files.

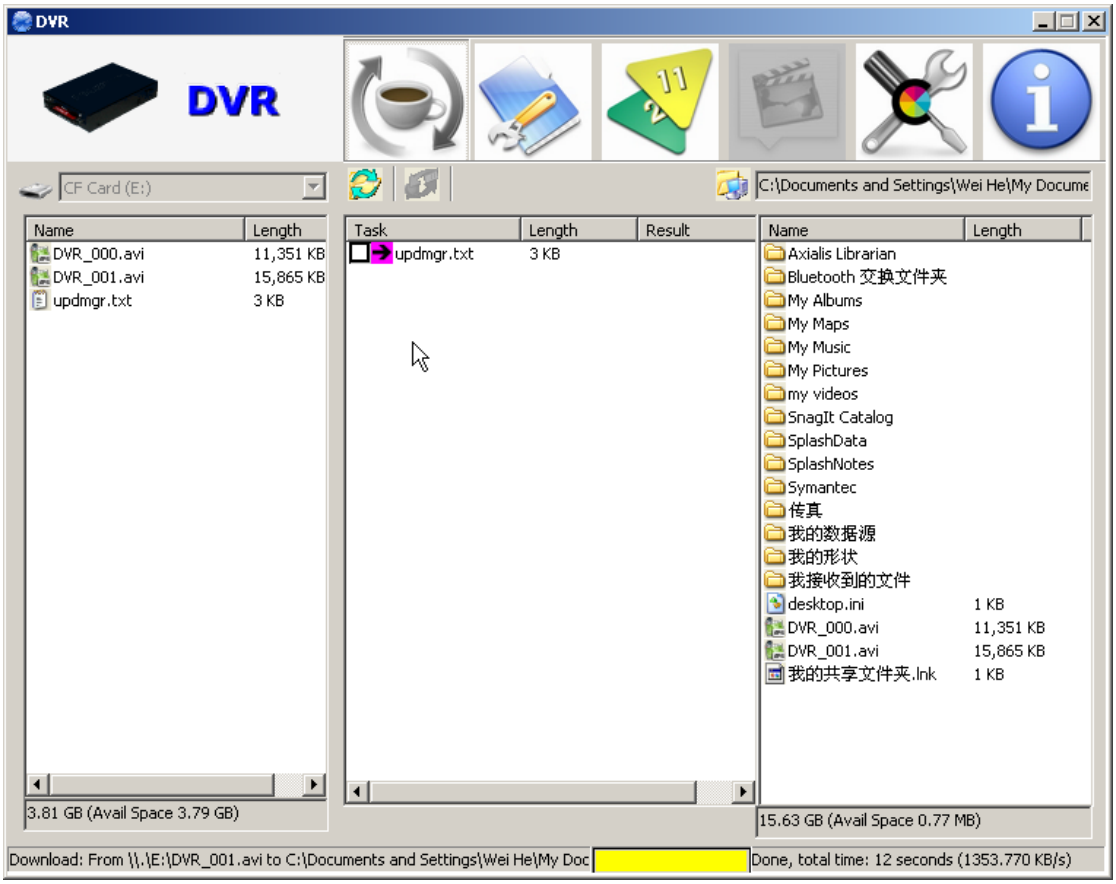
Executing… means the files being synchronizing, **SUCCESS** means the files had been synchronized successfully.

When a file being synchronizing, the yellow status bar will display on the button.

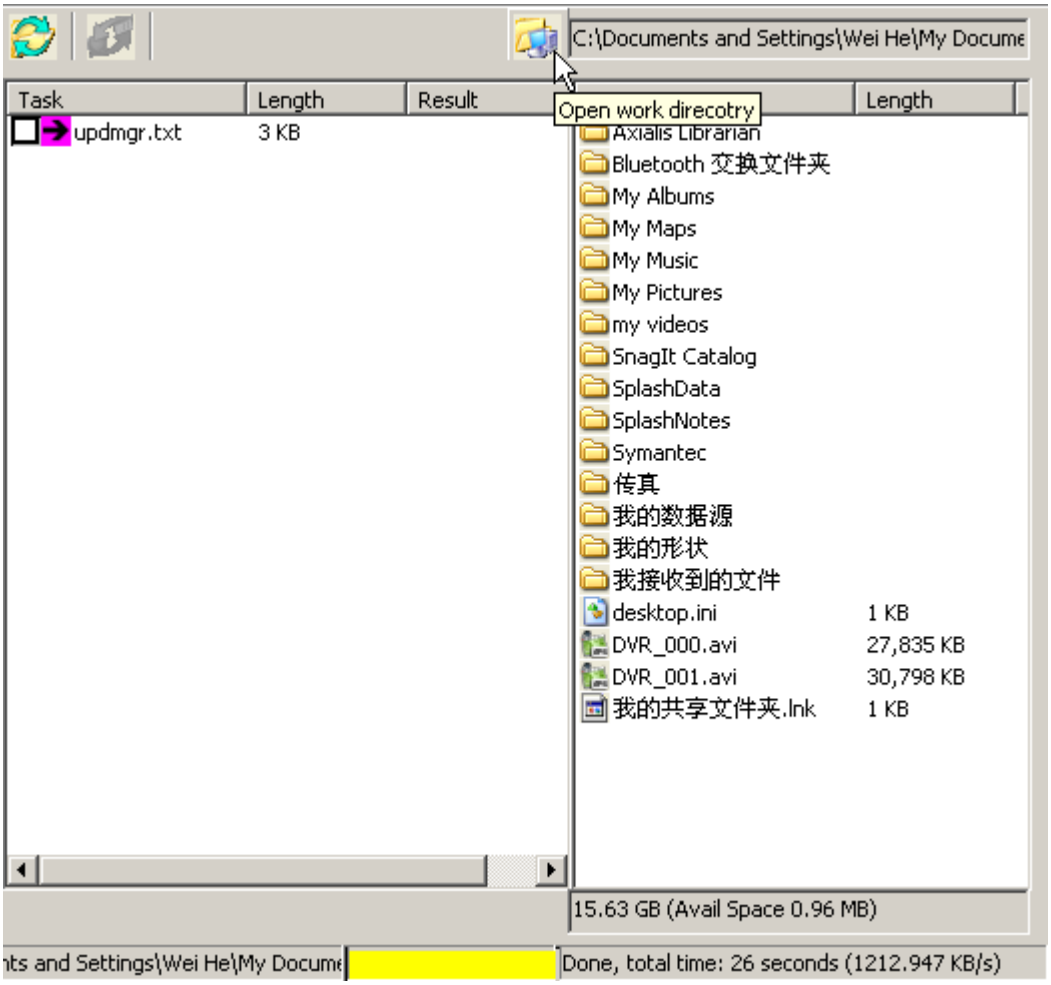
After all files are synchronized successfully, files will be synchronized to the folder on PC, you will find these files on the working folder column.



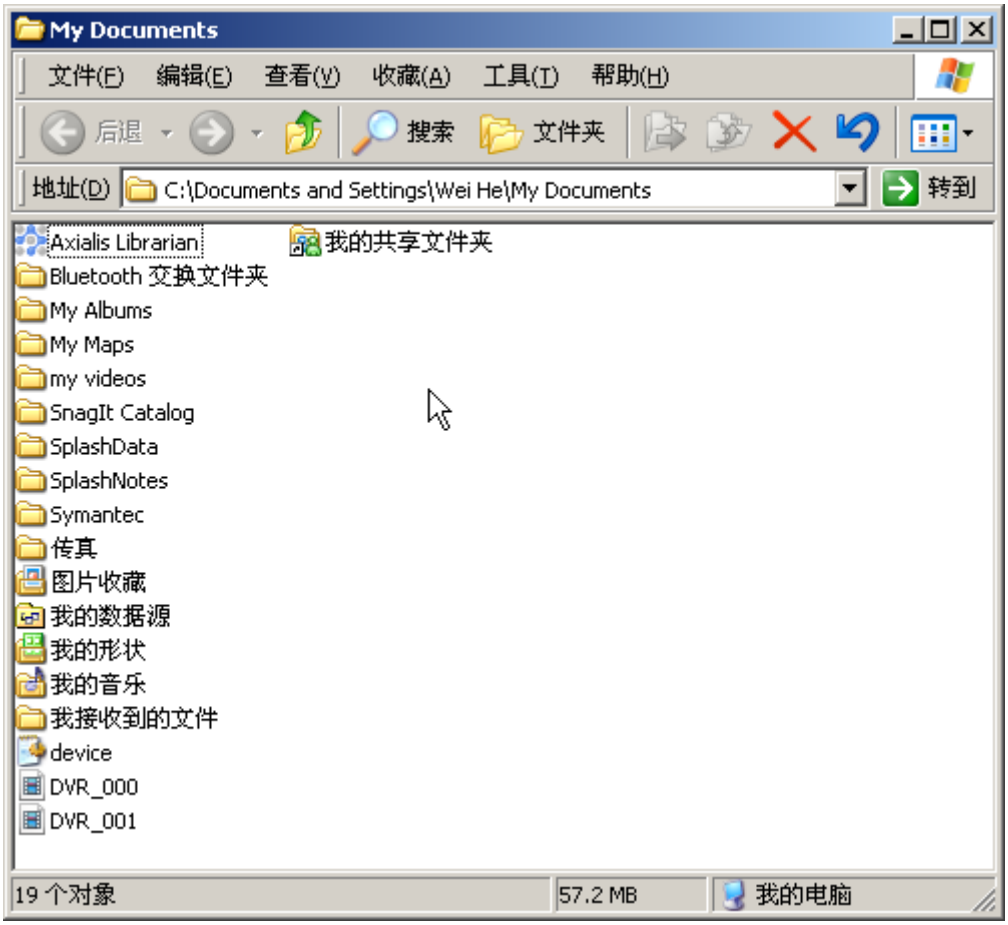
After synchronization, you can click refresh button to refurbish task column.



Click to open working folder on PC.

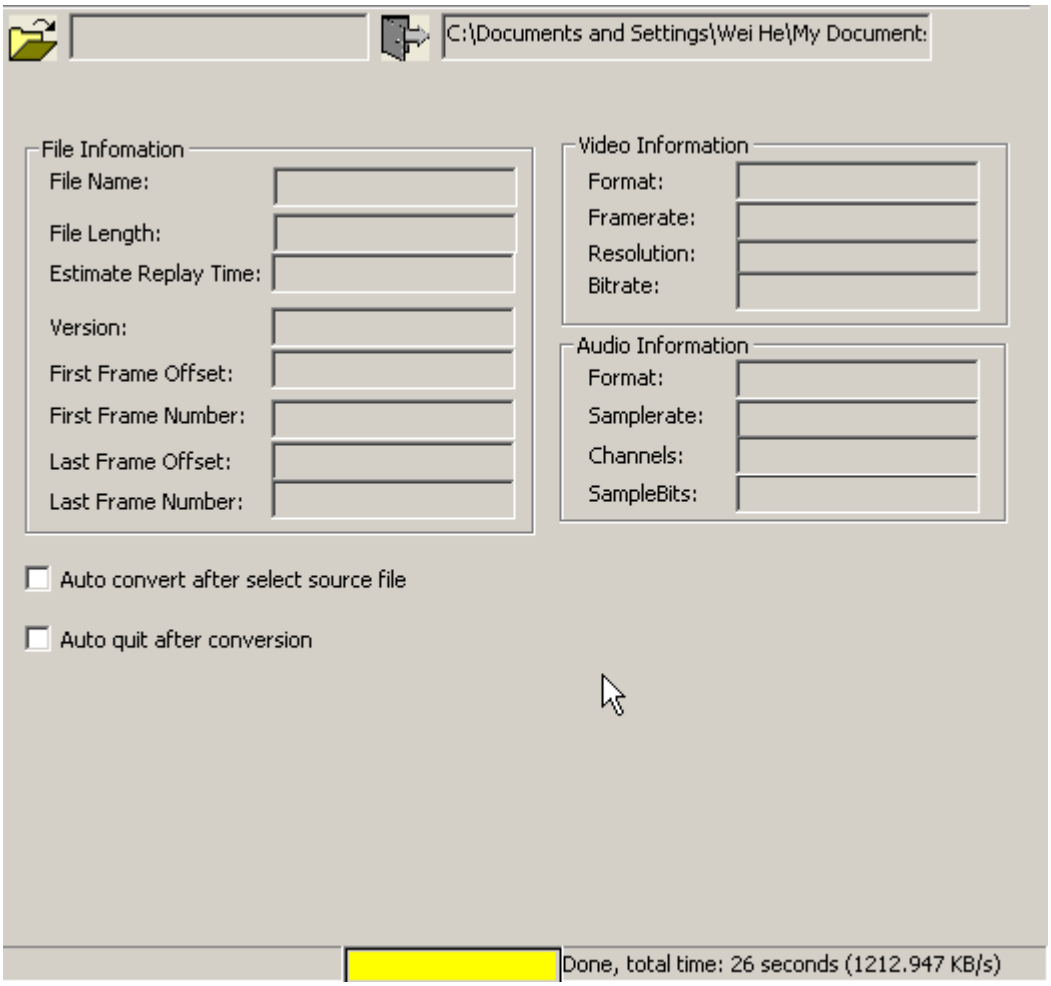


In synchronization, the .csf MPEG-2 recording file will be converted to standard MPEG-2 video automatically.


My Documents
文件(F) 编辑(E) 查看(V) 收藏(A) 工具(T) 帮助(H)
后退 搜索 文件夹
地址(D) C:\Documents and Settings\Wei He\My Documents
转到
Axialis Librarian
我的共享文件夹
Bluetooth 交换文件夹
My Albums
My Maps
my videos
SnagIt Catalog
SplashData
SplashNotes
Symantec
传真
图片收藏
我的数据源
我的形状
我的音乐
我接收到的文件
device
DVR_000
DVR_001
19 个对象
57.2 MB
我的电脑

MPEG-2 Converter

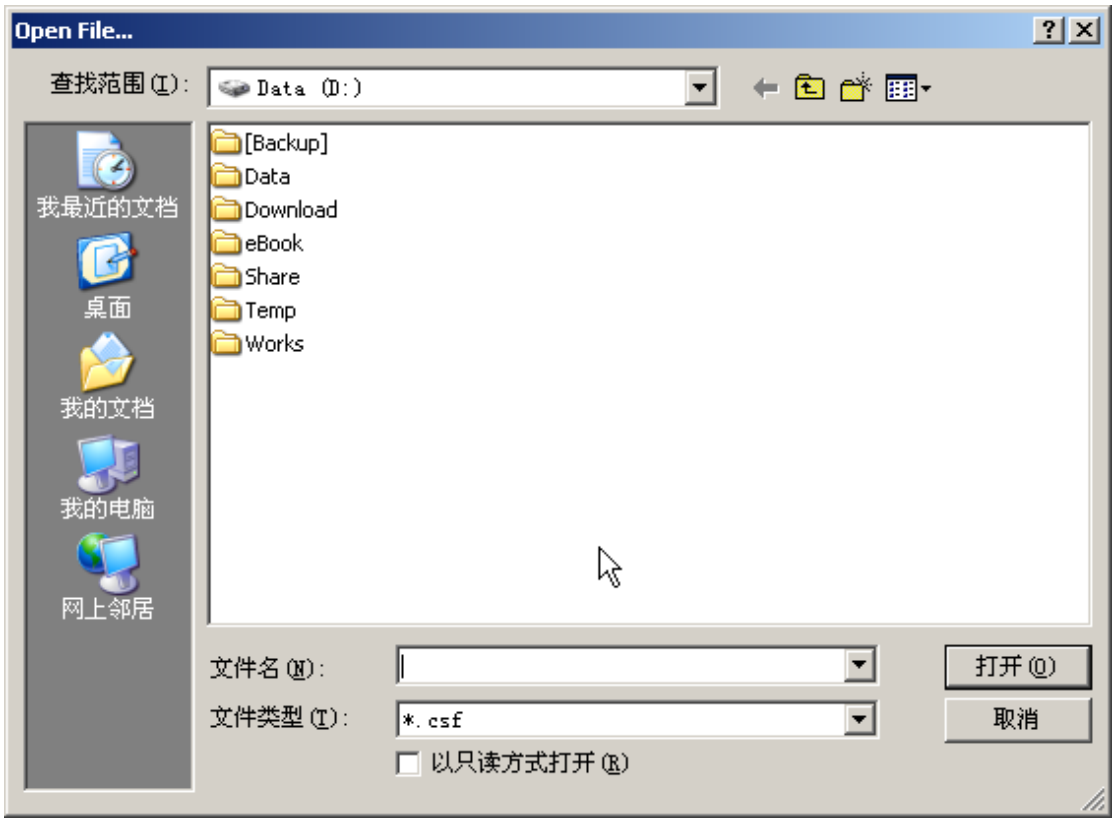
Click Conversion button to render MPEG-2 recording video manually.



Recorded MPEG-2 file have to be converted to standard MPEG-2 video for later video replay, edit & burn. The conversion of MPEG-4 is not required.

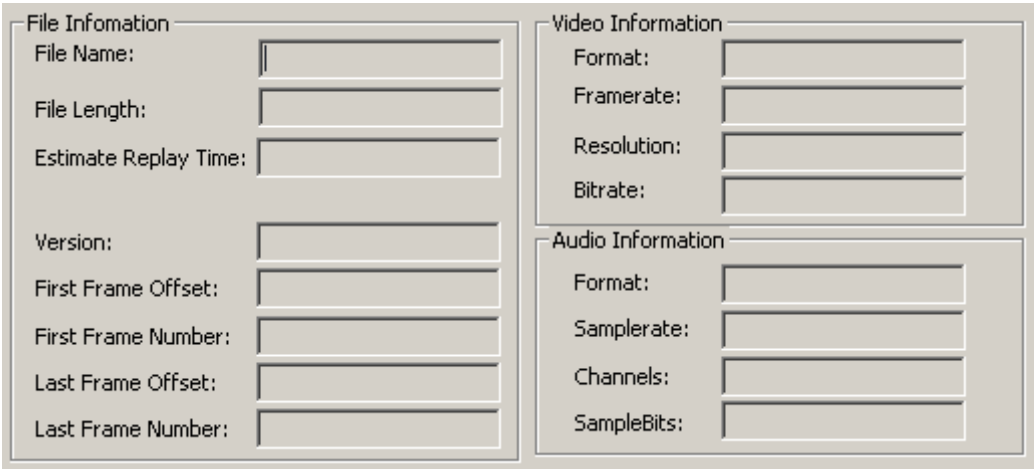
Sometime maybe you copy many .csf MPEG-2 recording files to PC, then convert them manually.

Click to open working folder on PC that you save .csf MPEG-2 files.



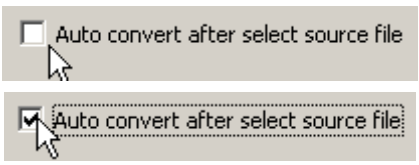
Then select .csf file that you want to convert.

After you select the source file to convert, detailed information of the recorded MPEG-2 video will be displayed.



Click to convert the .csf file that you select.

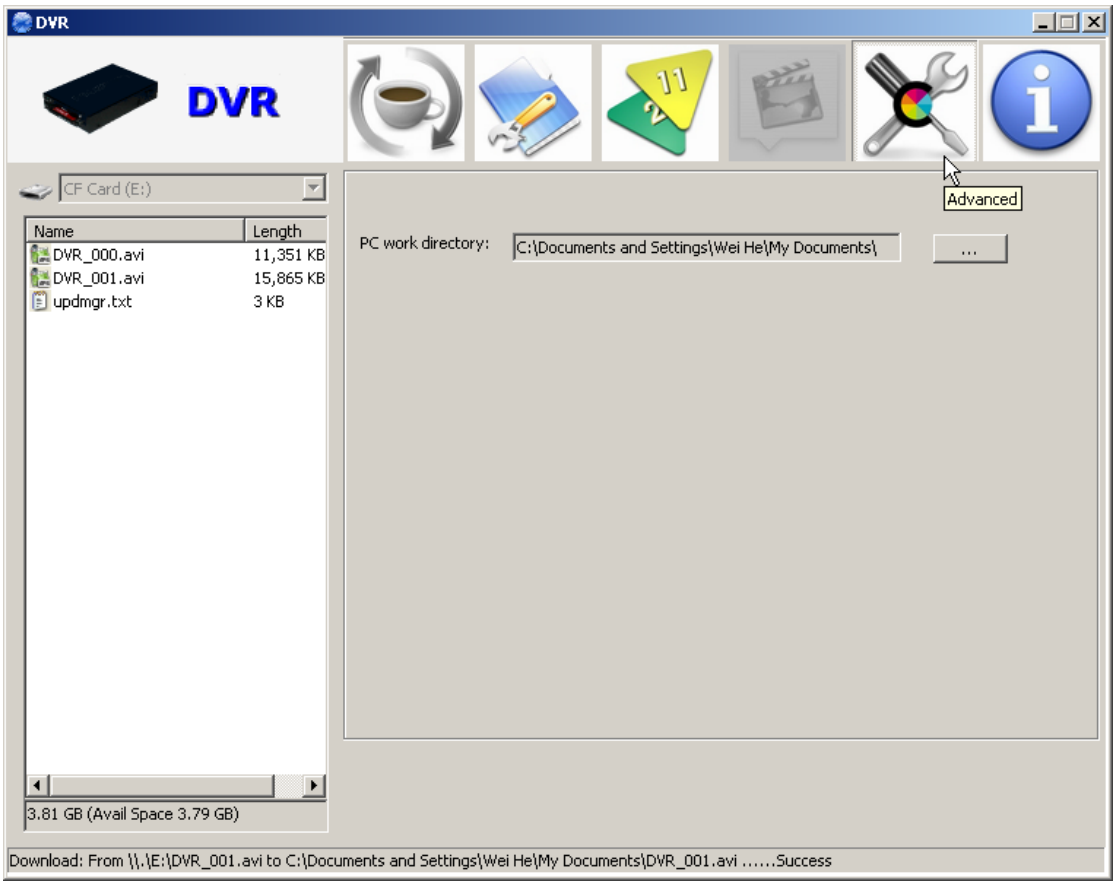
The file can be converted automatically after you select the file if you enable automatically convert option.



For better performance of conversion, it is recommend that source file is on the CF card in a card reader and target file is on the hard disk.

Advanced Configuration

Click Advanced Configuration button to configure system environment.



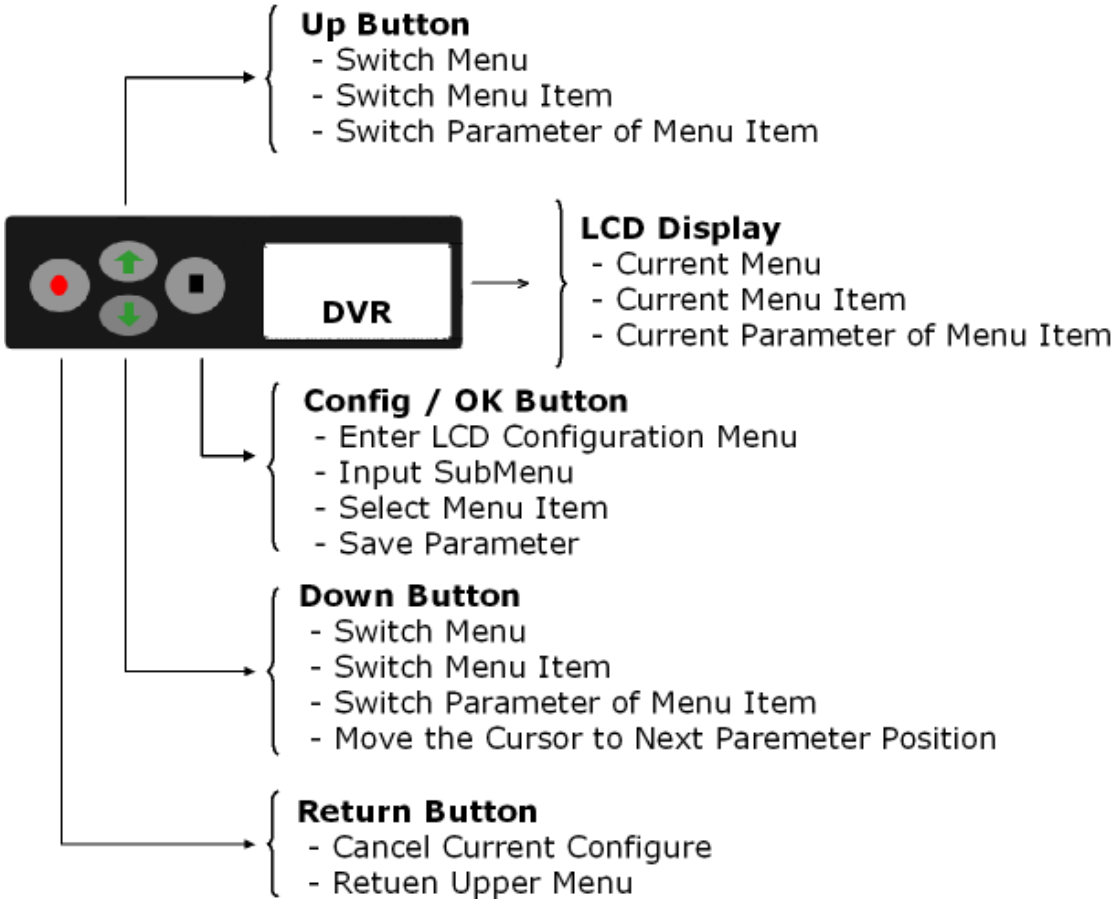
You can select working directory on PC to as synchronize folder.

About

Click About button to get the details information of DVR Desktop.

Configure DVR using LCD Menu

LCD Configuration Menu



Enter/Quit LCD Configuration Menu

Hold push button ■ at least 3 seconds to enter LCD configuration menu, once you enter LCD configuration menu successfully, the LCD will display valid menu/menu item & parameter of these menu item depend on your DVR version.

After you finish configuring, press ● to quit to upper menu.

You may need press ● one or two times once depend on your position in menu.

Once you enter the LCD configuration menu, the system will wait for you to select & configure, if you don't press any buttons, the system will quit the LCD configuration menu after 10 sec automatically.

Configure DVR in LCD Configuration Menu

Once you enter LCD configuration menu, you can switch menu using & buttons, then press to select the menu/menu item which you want to configure, using to select the parameter value & parameter area that you want to configure, then press to save the configuration.

When you finish configuration, press one or two times once to quit the LCD configuration menu.

LCD Configuration Menu Details

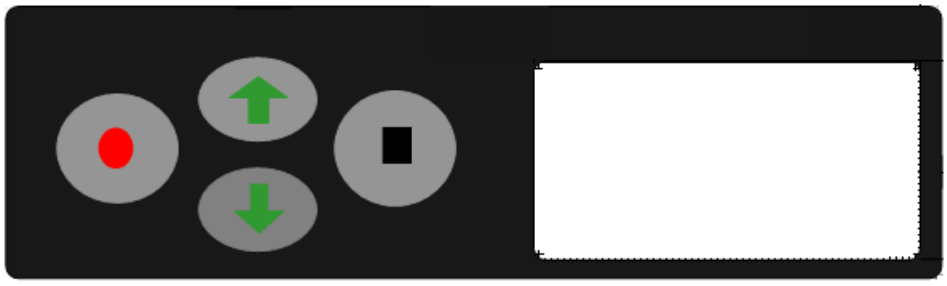
Menu

The valid menu of DVR is:

- **DATE**
- **INPUT**
- **VIDEO**
- **BEACON**
- **USERDES**
- **MISC**

In LCD configuration menu, Press & to navigate these menus.

Press to quit configuration menu return to ready status.



Menu Item & Parameter

DATE Menu

Menu	Menu Item	Parameter
DATE	DATE	● 07-04-02
	TIME	● 12:00:00
	STAMP	● Enable ● Disable

1. Menu Item – Date

The parameter format is yy-mm-dd, please set correct date.

Use ↑ to select correct year, then press ↓ switch to month area, use ↑ select correct month, then press ↓ switch to day area, use ↑ select correct day, press ↓ will switch to year again, finish setting the correct date, press ■ to save the current configuration, press ● quit to **DATE** menu.

2. Menu Item – Time

The parameter format is hour-minute-second, please set correct time.

Use ↑ select correct hour, then press ↓ switch to minute area, use ↑ select correct minute, then press ↓ switch to second area, use ↑ select correct second, press ↓ will switch to hour again, finish setting the correct time, press ■ to save the current configuration, press ● quit to **TIME** menu.

3. Menu Item – Stamp Status

Default status of stamp is **Disable**, please select proper stamp status to your requirement.

Press & to switch **Disable** & **Enable** status, then press save current configuration, press quit to **STAMP** menu.

INPUT Menu

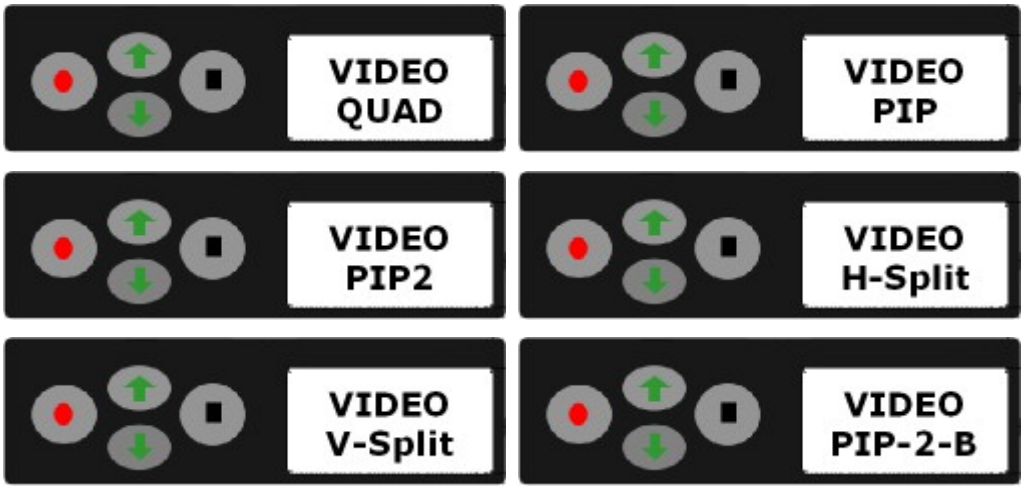
Menu	Menu Item	Parameter
INPUT	VIDEO	● QUAD ● PIP ● PIP2 ● H-Split ● V-Split ● PIP-2-B
	AUDIO	● Line In ● Ext Mic ● Int Mic

1. Menu Item – Video Input

You can configure the multi video input at the same time, this menu item is only for 4 Channel DVR.

Please consult 4 channel configuration chapters to get the details of this item.

Press & to switch video input configuration, then press to save current configuration, press to quit the **VIDEO** menu.



2. Menu Item – Audio Input

Default parameter is **Line In**, please select **Ext Mic** if you use external microphone input, or select **Int Mic** if you use internal microphone in the DVR.

Press & to switch **Line In**, **Ext Mic** & **Int Mic** parameter, then press to save the current configuration, press quit the **AUDIO** menu.

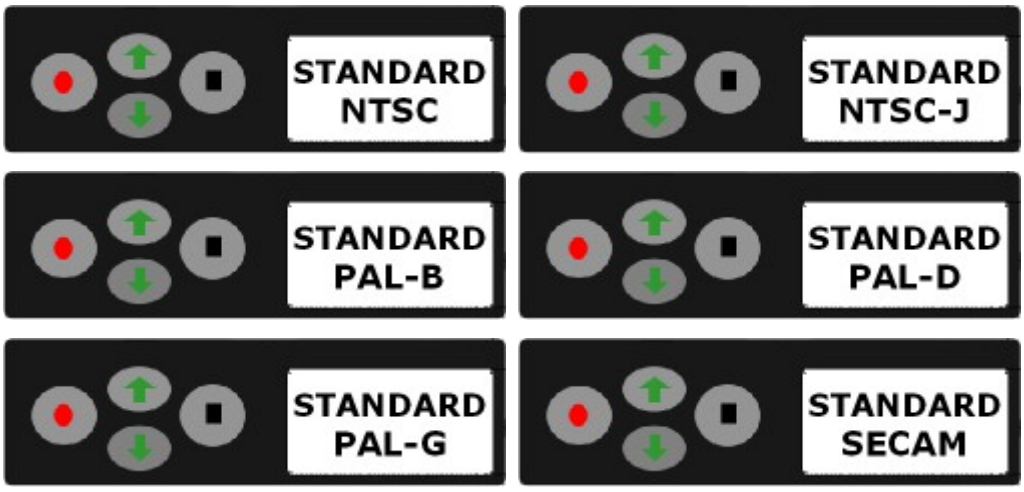
VIDEO Menu

Menu	Menu Item	Parameter
VIDEO	STANDARD	● NTSC ● NTSC-J ● PAL-B ● PAL-D ● PAL-G ● SECAM
	FORMAT	● MPEG-4 ● MPEG-2
	QUALITY	● 1M ● EP (2M) ● LP (4M) ● SP (6M) ● HQ (8M)

1. Menu Item – Video Standard

Default parameter is **NTSC**, please select correct video standard depend on your video source.

Press & to switch the video standard parameter, then press to save the current configuration, press quit the **STANDARD** menu.



2. Menu Item – Video Format

Default parameter is **MPEG-4**, please select correct video format to suit.

Press ↑ & ↓ to switch **MPEG-4** & **MPEG-2** format, then press ■ to save the current configuration, press ● quit the **FORMAT** menu.

3. Menu Item – Video Quality

Default parameter is **EP (2M)**, please select proper video quality to suit.

Press ↑ & ↓ to switch **1M**, **EP (2M)**, **LP (4M)**, **SP (6M)** & **HQ (8M)** quality, then press ■ to save current configuration, press ● quit the **QUALITY** menu.

BEACON Menu

Menu	Menu Item	Parameter
BEACON	BEACON	● Disable ● Enable
	MASK	● 10 Sec

1. Menu Item – Beacon Status

Default status of beacon is **Disable**, please select proper beacon status to suit.

Press & to switch **Disable** & **Enable** status, then press to save current configuration, press quit the **BEACON** menu.

2. Menu Item – Beacon Mask Delay

Default parameter of beacon mask delay is **10 Sec**, please select proper delay time to suit.

Press & to select proper value of beacon mask delay, then press to save current configuration, press quit the **MASK** menu.

USERDES Menu

Menu	Menu Item	Parameter
USERDES	HOSTNAME	● HostName
	SCENE	● Scene
	GROUP	● Group
	CARRIER	● Carrier

1. Menu Item – Hostname

Default value of **HostName** is Hostname, use select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct hostname, press to save current configuration, press quit the **HostName** menu item.

2. Menu Item – Scene

Default value of **Scene** is Scene, use select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct scene, press to save current configuration, press quit the **Scene** menu item.

3. Menu Item – Group

Default value of **Group** is Group, use select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct group, press to save current configuration, press quit the **Group** menu item.

4. Menu Item – Carrier

Default value of **Carrier** is Carrier, use select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct carrier, press to save current configuration, press quit the **Carrier** menu item.

MISC Menu

Menu	Menu Item	Parameter
MISC	CFGITEM	● Profile Items
	LFPREFI	● DVR_
	SYSCLOC	● Yes ● No

1. Menu Item – Profile Item

When you into this menu, you can change current profile item between all profile items that you configured.

Use & to switch current profile item.

Finish selecting, press to save current configuration, the DVR will reboot automatically to enable current profile item.

2. Menu Item – File Prefix

Default value of file prefix is **DVR_**, you can change it to suit your requirements.

use to select correct first letter, then press switch to next letter area, until all letters are set, finish setting the correct hostname, press to save current configuration, press to quit the **Lfprefi** menu item.

3. Menu Item – SysCloc

The system clock of the DVR need to be calibrated for accurate time recording, it is important for the Lap Timer. The default value is No, if you need to calibrate the system clock, use select Yes, then press to start calibrating.

After you select **Yes** to start calibrating, the DVR will restart.

The system clock will be calibrated on reboot.

After the system clock of DVR is calibrated successfully, the DVR will restart again.

LCD Configuration Menu Structure

Menu	Menu Item	Parameter
INPUT	VIDEO	- QUAD - PIP - PIP2 - H-Split - V-Split - PIP-2-B
	AUDIO	- Line In - Ext Mic - Int Mic
VIDEO	STANDARD	- NTSC - NTSC-J - PAL-B - PAL-D - PAL-G - SECAM

	FORMAT	- MPEG-2 - MPEG-4
	QUALITY	- 1M (1M) - EP (2M) - LP (4M) - SP (6M) - HQ (8M)
DATE	DATE	07-03-20
	TIME	12:00:00
	STAMP	- Enable - Disable
BEACON	BEACON	- Enable - Disable
	MASK TIME	10 sec
USERDES	HOSTNAME	HostName
	SCENE	Scene
	GROUP	Group
	CARRIER	Carrier
MISC	CFGITEM	Profile Items
	LFPREFI	DVR_
	SYSCLOC	- Yes - No

Firmware Upgrade

The firmware of the DVR can be upgraded if necessary. The DVR will check the core image file on CF card while power up. If image & OSD file is found then the firmware of the DVR will be upgraded automatically. Please follow below instructions to upgrade.

1) Format CF card in FAT32 file system.
2) Copy imge.2510.img and osd.img to the root of CF card.
3) Use **DVR Desktop Software** to generate DEVICE.INI depended on your needs. DEVICE.INI must be under the root of CF card while upgrading.
4) Power off and then insert CF card into DVR.
5) Turn on the power of DVR.
6) The firmware will be upgraded after power on. The LED turns to red, then yellow and alternately flashes red and yellow several times. It takes about two minutes to upgrade.
   At the same time, LCD will display schedule of upgrade process if you upgrade from Firmware V1.0.4 or newer.

   When the DVR upgrades successfully, it will reboot automatically.

   *** DON'T TURN OFF POWER DURING THIS PERIOD!!**
7) The DVR will be rebooted automatically after upgrade. The LED will change to red, yellow and then green. It takes about 12 seconds to reboot.
8) Over if the LED is green. A Beep will sound one time once the DVR upgrades successfully.

**** To Upgrade 4 Channel DVR, after reboot successfully, you must power off & power on 4 Channel DVR manually.***

The file, updmgr.txt, will be found under the root of CF card. The phrase of following can be found in the content of updmgr.txt.
kernel image: image.2510.img[Sun Oct 15 03:33:24 2006] == (Mon Apr 2 03:33:24 2007)

The date and time correspond to the version of firmware. Upgrade is successful if the date and time is the same as the data and time kernel generated.

**** Power supply has to be guaranteed normal while upgrading. DVR can not be restored if upgrade fail.***

**** Wait at least 4-5 minutes till reboot successful. LED keeps constant green if reboot successful.***

FAQ

1) LED yellow flash
   CF card is full. Change CF.

2) LED is red
   Failure or battery is low. Use the AC power adapter or external battery pack.

3) Charging period
   It takes 5-8 hours to charge a fully discharged battery. The charge indicator LED will go out once fully charged.

4) File is not accessible or DVR can't startup
   File system is wrong. This can happed after abnormal power off and long time usages of CF card. Format CF card in FTAT32 file system.

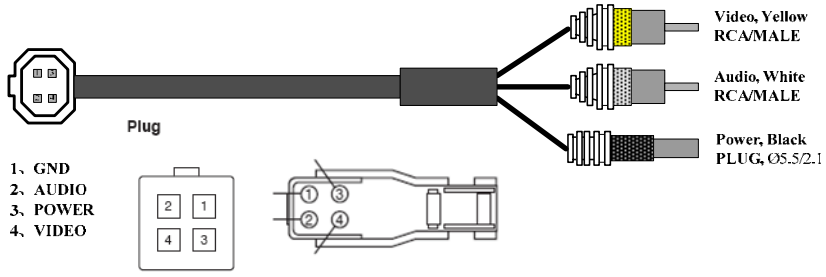
Appendix

IRIS Interface on Board

1- GND
2- Audio In
3- Power Output (Limited load for camera)
4- Video In

The number is corresponding to the pin number of IRIS connector.

IRIS Cable



Revision

05/10/2008, Version 2.0.1

- Improve Desktop Start-Up
- Fix Bug

04/28/2008, Version 2.0.0

- Using Synchronize technology
- Change GUI
- Improve adjustable position support of Lap Timer
- Adjust options arrange
- Add Record Key Frame option for surveillance application
- Change some default configuration
- Change configuration file to DEVICE.INI

03/10/2008, Version 1.1.2

- Add Multi-Configuration Item
- Add Split Beacon support
- Add adjustable position support of Lap Timer
- Add new arrange method of PIP
- Add Record Key Frame option for surveillance application
- Improve upgrade process
- Improve MPEG-2 conversion code
- Change configuration file name to DEVICE.INI

10/18/07, Version 1.1.1

- Add 1M(CIF/SIF) Bitrates Encode Option
- Add 8M Bitrates Encode Option
- Add Single recording video file Cycle Record Mode
- Add Full Disk (CF Card) Cycle Record Mode
- Add Analog Menu Output for 4 Channel DVR
- Replace OSD library for 1 Channel DVR, Support black border of OSD font
- Improve large CF card support

09/24/07, Version 1.1.0

- Improve 4-Channel DVR support
- Improve large CF card support
- Add Power-Off Timer function
- Add Cycle Record function
- Add customized LCD Display
- Add System Clock Calibrate function
- Decrease the time of starting

06/08/07

- Add on 4-Channel DVR support
- Optimize LANC Remote Control support

05/08/07

- Optimize LANC Remote Control support
- Add new version IR Remote Control support
- Optimize Record on Power On function
- Add Beep/Vibration Enable/Disable option
- Add Time Stamp in two format & disable option
- Optimize Beacon support
- Optimize DVR Configure Utility GUI
- Fix some bug
- Release DVR Configure Utility V1.0.5 Final version
- Release Firmware V1.0.5 Image upgrade file Final version
- Release Official User's Manual V1.0.5.1

04/28/07

- Add more version LANC Remote Control support
- Add Auto Record on Boot function
- Add Beep Enable/Disable option
- Optimize Beacon support
- Release DVR Configuration File Generator V1.0.5
- Release Firmware V1.0.5 Image upgrade file
- Release Official User's Manual V1.0.5

04/02/07

- Add LCD support
- Add DVR status display on LCD
- Add configuration menu based on LCD
- Release DVR Configuration File Generator V1.0.4
- Release Firmware V1.0.4 Image upgrade file
- Release Official User's Manual V1.0.4

02/13/07

- Add osd.img into firmware upgrade
- Release DVR Configuration File Generator V1.0.3
- Release Firmware Image upgrade file

10/01/06

- Initial Release